THE

QUARTERLY JOURNAL

OF

ECONOMICS

MAY, 1912

THE REGULATION OF RAILWAY RATES UNDER THE FOURTEENTH AMENDMENT[1]

SUMMARY

I. Early cases, such as the Slaughter House Case and Munn v. Illinois seemed to indicate narrow scope for the 14th Amendment, 389. — II. The Minnesota Rate Cases (1890) put greater restriction on the regulative powers of states, 393. — Dissenting Opinions, 395. — The question of principle directly presented in the Texas Case, Reagan v. Farmers Loan & Trust Co. (1894). The State inhibited, 398. — Other cases, establishing the right of judicial inquiry, 400. — III. The problem of valuation. The Nebraska Rate Cases (1898), 402. — No definite rule stated regarding valuation, 404. — A suggested distinction between public service corporations and those placing their property in an analogous position, 407. — An unremunerative rule sustained in the Minnesota coal case (1902), 410. — IV. What is reasonable value of property? The San Diego Water-rate case, 412. — The Knoxville Water case, 414. — The New York Gas Co. Case, 416. — Rising land value, 417; the valuation of the franchise, 418; the value of a going concern, 419. — The element of wages of superintendence, 421. — The law still in a formative stage as regards reasonable value, 423. — Difficulties from interaction of state and federal regulation, 424.

I

In 1873 the Supreme Court of the United States, in the first decision[2] that involved the construction of

[1] This paper gives the substance of lectures delivered at Harvard University on the 14th Amendment.

[2] Slaughter House Cases, 16 Wallace, 36.

It may not be amiss to quote the language of that part of the first section of the 14th Amendment which is here under consideration:

"No state shall make or enforce any law which shall abridge the privileges or

the Fourteenth Amendment, limited its application in a way that must have surprised both those who had advocated and those who had opposed its adoption on the floor of Congress. The court held that the privileges and immunities of citizens of the United States protected by the amendment were not the general privileges and immunities of citizens, but only those special privileges and immunities that belonged to citizens of the United States as such, — the right to come to the seat of government, to assert claims against the national government, to transact business with it, to seek its protection, to share its offices, to have free access to its seaports, subtreasuries, land offices, and the courts of justice of the several states, to demand its care and protection over life, liberty, and property when on the high seas or in the jurisdiction of a foreign government, to assemble and petition for redress of grievances, and to have the writ of habeas corpus; to use the navigable waters of the United States, and to enjoy all rights secured by treaty with foreign nations, to change citizenship from one state to another with the same rights as other citizens of that state. Important as these rights are, they are not the ordinary everyday rights that closely affect the citizen. For these he was left to the protection of the states. Tho the actual decision related only to one clause of the amendment, the opinion of Mr. Justice Miller, who spoke for the court, intimated strongly that the clause forbidding the states to deprive any person of life, liberty, and property without due process of law, and to deny to any person within its jurisdiction the equal protection of the laws, was

immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws."

The reader need hardly be reminded that this Amendment was made after the Civil War, being ratified in 1868.

intended to protect against unjust discrimination the negro race only.

Three years later, however, in the Granger Cases,[1] (1876) it was taken for granted that the scope of the latter clause of the amendment was broader, and that it protected not merely those of the negro race, but all persons. The court in fact followed the dissenting opinions of Justices Field and Bradley, not the dictum of the prevailing opinion of Justice Miller.

The Granger Cases settled the authority of the state legislatures to control the charges of a business affected with a public interest. Some of the language used by the court went far in denying any right of the court to interfere. It was said distinctly that tho the power conceded to the legislature was liable to be abused, the people must resort for protection against abuses to the polls and not to the courts. It was conceded that under some circumstances, but not under all, statutory regulations might deprive the owner of his property without due process of law; but it was held that the amendment did not change the law; "it simply prevents the States from doing that which will operate as such a deprivation."

The question of rates seemed by these decisions determined to be a legislative, not a judicial question. Six years later[2] the court held that a railroad company whose board of directors was by the charter authorized to establish rates could not as against a general law of the state exact more than three cents per mile per passenger. The reasoning was put on a narrow basis, involving only the construction of the charter. The

[1] Munn v. Illinois, 94 U. S. 113. [1877.] Chicago, B. & Q. R. R. Co. v. Iowa, 94 U. S. 155. Peik v. Chicago and N. W. Railway Co., Lawrence v. Same, 94 U. S. 164. Chicago, M. & St. C. R. R. Co. v. Ackley, 94 U. S. 179. Winona & St. Peter R. R. Co. v. Blake, 94 U. S. 180. Stone v. Wisconsin, 94 U. S. 181.

[2] Ruggles v. Illinois, 108 U. S. 526. [1883.]

power granted was to determine the rates by by-laws; the power to pass by-laws was limited to such as were not repugnant to the laws of the state, and hence it was held that the by-laws could not fix a greater rate than was permitted by the general legislation; "grants of immunity from legitimate control," said the Chief Justice, "are never to be presumed."

The states soon began to avail themselves of the power to control business affected with a public interest. The first important case concerning the limitation of their powers arose in California.[1] It decided that the rates of a water company might be fixed by a county board in which the water company was not represented, altho the charter of the company provided for its representation. The court expressly reserved the question what might be done in case the municipal authorities did not exercise an honest judgment or fixed a price manifestly unreasonable. Two years later,[2] it was decided that railroad charges might be fixed by a Railroad Commission, altho charters provided that the companies themselves might fix the tolls and charges. The legislature of Mississippi, by legislation subsequent to the charters, created a Railroad Commission with power to revise rates and increase or reduce them as experience and business operation might show to be just. It was argued that the legislature by the provision in the charters had surrendered the power of control over fares and freights. It was conceded that the rates must by the rule of the common law be reasonable, and the court held that the state was left free to act on the subject of reasonableness within the limits of its general authority as circumstances might require. "The right to fix

[1] Spring Valley Water Works v. Schottler, 110 U. S. 347. [1884.]

[2] Railroad Commission Cases, 116 U. S. 307. [1886.]

reasonable charges has been granted," said Chief Justice Waite, "but the power of declaring what shall be deemed reasonable has not been surrendered. If there had been an intention of surrendering this power, it would have been easy to say so; not having said so, the conclusive presumption is there was no such intention." The court, however, was careful to guard against an inference that the power of regulation was without limit. "The power to regulate," it was said, "is not a power to destroy, and limitation is not the equivalent of confiscation. Under pretense of regulating fares and freights, the State cannot require a railroad corporation to carry persons or property without reward; neither can it do that which in law amounts to a taking of private property for public use without just compensation, or without due process of law."

The statute was held not to be in conflict with the due process clause and the equal protection clause of the Fourteenth Amendment. "General statutes fixing maximum rates," it was said, "do not necessarily deprive the railroad company of its property contrary to the amendment." The importance of the qualifying word "necessarily" appeared in subsequent decisions when it was held that such statutes might sometimes be void. The decisions thus far were in favor of public control, and against review by the courts.

II

Four years later, in the Minnesota Rate Cases,[1] the court took a position hard to reconcile with what was said in *Munn v. Illinois* and the succeeding cases.

[1] Chicago, M. & St. P. Railway Co. v. Minnesota, 134 U. S. 418. [1890.] Minneapolis Eastern Railway Co. v. Minnesota, 134 U. S. 467. [1890.]

The Minnesota Commission had ordered a reduction of rates for transportation of milk from three cents to two and a half cents a gallon; and for switching cars from $1.25 and $1.50 per car to $1.00 per car. The railroads resisted and, upon application to the state courts, a mandamus was issued to put in force the rates fixed by the commission. The Supreme Court reversed this action. Justice Blatchford rested the reversal upon the fact that the decision of the railroad commission was made a finality under Minnesota law; he said that the commission could not be regarded as clothed with judicial functions or possessing the machinery of a court of justice. "The question of the reasonableness of a rate of charge for transportation by a railroad company, involving as it does the element of reasonableness both as regards the company and as regards the public, is eminently a question for judicial investigation, requiring due process of law for its determination. If the company is deprived of the power of charging reasonable rates for the use of its property, and such deprivation takes place in the absence of an investigation by judicial machinery, it is deprived of the lawful use of its property and thus in substance and effect, of the property itself, without due process of law and in violation of the Constitution of the United States; and in so far as it is thus deprived, while other persons are permitted to receive reasonable profits upon their invested capital, the company is deprived of the equal protection of the laws."

The court seemed by this language to decide that the question of rates was always a judicial question, and not, as had been held before and has been held since, a legislative question; that it could therefore be settled by a judicial tribunal only; that if a railroad company was not allowed to charge reasonable rates,

its constitutional rights were violated; and that it was entitled to reasonable profits in the same sense as other persons not engaged in a public calling. It is difficult to see how the right to profit as individuals not engaged in a public calling can be consistent with the right of the state to regulate the rates of those engaged in such a calling. The opinion, carried to its logical conclusion, would substitute the courts for the commission as final arbiter; and in effect would throw the whole burden of rate making upon the judicial machinery. No wonder the opinion did not command the unanimous voice of the court. Justice Miller concurred in the result, but upon the ground that the commission had applied to the courts to enforce their order; that in substance this was asking the courts to determine that the order was reasonable, and hence the court had the right and duty to inquire into the reasonableness of the tariff of rates.

Justice Bradley, speaking for himself and Justices Gray and Lamar, dissented. He pointed out that the decision practically overruled *Munn v. Illinois* and the railroad cases decided with it; that the question of the reasonableness of a charge, so far from being a judicial question, was preëminently a legislative one involving considerations of policy as well as of remuneration; that in practice it had usually been determined by the legislature by fixing a maximum in the charter of the company or afterwards if there were no binding contract; that the question only became judicial when the legislature enacted simply that rates should be reasonable, thus necessarily submitting the question what was in fact reasonable to the judicial tribunals; but that the legislature might itself or by its commission fix the rates; and that for that purpose their decision was final, unless they so acted as to

deprive parties of their property without due process of law; but that a mere difference of judgment as to amount between the commission and the companies without any indication of intent on the part of the commission to do injustice, did not amount to a deprivation of property. The real difference between Justice Blatchford and Justice Bradley was as to the question presented in a rate case. According to the former it was: "is the rate a reasonable one, and such as would afford the same profit as could be realized by one not subject to regulation?" According to the latter it was: "is the rate so unreasonable as to be arbitrary and amount to confiscation of property rather than mere regulation of a rate?" The difference is striking and fundamental. If the legislature had the right to regulate rates, as had been settled in the Granger cases, then the property of the railroads was qualified by that public right, and there could be no deprivation of such qualified property as long as the legislature confined itself to fair regulation and did not undertake to confiscate under the guise of regulation. The view of the minority has finally prevailed.[1]

Justice Bradley in the course of his opinion took occasion to speak of the relations between the courts and the legislature. His words are worth quoting: "It is always a delicate thing for the courts to make an issue with the legislative department of the government, and they should never do so if it is possible to avoid it. By the decision now made we declare, in effect, that the judiciary, and not the legislature is the final arbiter in the regulation of fares and freights of railroads and the charges of other public accommodations. It is an assumption of authority on the part of the judiciary, which, it seems to me, with all

[1] Atlantic Coast Line v. No. Car. Corp. Comm., 206 U. S. 1. [1907.]

due deference to the judgment of my brethren, it has no right to make."

The decision of the court in the Minnesota Rate Cases, it was further pointed out, gave a new extension to the meaning of the words "due process of law." Justice Blatchford's language must mean that due process of law requires judicial procedure "with the forms and machinery," to quote his language, "provided by the widsom of successive ages for the investigation judicially of the truth of a matter in controversy." Long before this decision the court had held in an elaborate opinion by Mr. Justice Curtis[1] that the same words in the Fifth Amendment did not necessarily imply a regular proceeding in a court of justice or after the manner of such courts; and this view had been adopted and applied in the construction of the Fourteenth Amendment. The difficulty of Mr. Justice Blatchford's view becomes apparent if it is applied to the taking of the property of the citizen by taxation, by assessments for public improvements, or by administrative measures under the police power; or to restraint of the person made necessary by our immigration laws. "In judging what is due process of law," said Mr. Justice Bradley, "respect must be had to the cause and object of the taking, whether under the taxing power, the power of eminent domain, or the power of assessment for local improvements, or none of these: and if found to be suitable or admissible in the special case, it will be adjudged to be due process of law; but if found to be arbitrary, oppressive and unjust, it may be declared to be not 'due process of law.'"

The decision in the Minnesota Rate Case inevitably led to repeated efforts to secure review by the courts

[1] Murray's Lessee v. Hoboken Land and Improvement Co., 18 How. 272. [1856.]

of rates fixed by statute or the orders of public commissions.

After an unsuccessful effort by a friendly litigation to have a particular rate declared unreasonable,[1] the question next arose in the great case of *Reagan v. Farmers Loan & Trust Co.*,[2] noteworthy because it was the first successful effort to enjoin the enforcement of rates fixed by a commission.

The question was squarely raised, for the defendant denied the power of the court to entertain the inquiry at all, and insisted that the fixing of rates for carriage by a public carrier was a matter wholly within the power of the legislative department of the government and beyond examination by the courts. To this the court through Mr. Justice Brewer answered: "The province of the courts is not changed, nor the limit of judicial inquiry altered, because the legislature instead of the carrier prescribes the rates. The courts are not authorized to revise or change the body of rates imposed by a legislature or a commission; they do not determine whether one rate is preferable to another, or what under all circumstances would be fair and reasonable as between the carriers and the shippers; they do not engage in any mere administrative work; but still there can be no doubt of their power and duty to inquire whether a body of rates prescribed by a legislature or a commission is unjust and unreasonable, and such as to work a practical destruction to rights of property, and if found so to be, to restrain its operation."

The complainants challenged the tariff as a whole and the court's inquiry was limited to its effect as a whole. The facts were thus stated by the court:

[1] Chicago & Grand Trunk Railway Co. v. Wellman, 143 U. S. 339. [1892.]

[2] 154 U. S. 362 [1894.]

The cost of this railroad property was $40,000,000; it cannot be replaced to-day for less than $25,000,000. There are $15,000,000 of mortgage bonds outstanding against it, and nearly $10,000,000 of stock. These bonds and stock represent money invested in the construction of this road. The owners of the stock have never received a dollar's worth of dividends in return for their investment. The road was thrown into the hands of a receiver for default in payment of the interest on the bonds. The earnings for the last three years prior to the establishment of these rates were insufficient to pay the operating expenses and the interest on the bonds. In order to make good the deficiency in interest the stockholders have put their hands in their pockets and advanced over a million of dollars. The supplies for the road have been purchased at as cheap a rate as possible. The officers and employes have been paid no more than is necessary to secure men of the skill and knowledge requisite to suitable operation of the road. . . . The actual reduction by virtue of this tariff in the receipts during the six or eight months that it has been enforced amounts to over $150,000.

Upon these facts the Court said:

A general averment in a bill that a tariff as established is unjust and unreasonable, is supported by the admitted facts that the road cost far more than the amount of the stock and bonds outstanding; that such stock and bonds represent money invested in its construction; that there has been no waste or mismanagement in the construction or operation; that supplies and labor have been purchased at the lowest possible price consistent with the successful operation of the road; that the rates voluntarily fixed by the company have been for ten years steadily decreasing until the aggregate decrease has been more than fifty per cent; that under the rates thus voluntarily established, the stock, which represents two-fifths of the value, has never received anything in the way of dividends, and that for the last three years the earnings above operating expenses have been insufficient to pay the interest on the bonded debt, and that the proposed tariff, as enforced, will so diminish the earnings that they will not be able to pay one-half the interest on the bonded debt above the operating expenses; and that such an averment so supported, will, in the absence of any satisfactory showing to the contrary, sustain a finding that the proposed tariff is unjust and unreasonable, and a decree reversing it being put in force.

In deciding whether a tariff is so unreasonable and unjust as practically to destroy the value of the carrier's property, it is of course essential to fix the standard or principle upon which that value is to be determined.

Upon this question the Reagan case is indecisive. Some of the language suggests that cost of the property is the proper measure of its value; other language, cost of replacement; and still other language, present value. The question was left for discussion in the later cases.

The Reagan case had dealt with the effect of the tariff of rates as a whole. Similar questions arose in *St. Louis and San Francisco Railway v. Gill*,[1] where it was decided that the correct test was the effect of the rates on the whole line of the carrier's road, and not the effect upon that portion which was formerly a part of one of the consolidating roads; that a company cannot claim the right to earn a net profit for every mile of road, nor attack as unjust a regulation which fixes a rate at which some part would be unremunerative; that the earnings of the entire line must be estimated as against all its legitimate expenses under the operation of the act within the limits of the State. The last qualification presents a new difficulty, — that of severing a railroad into parts divided by the imaginary state lines. The later effort to segregate intrastate and interstate business has led to difficult problems still in process of solution. The Gill case was a suit for a penalty, and the court in referring to Justice Miller's statement in the Minnesota Rate cases that the rates were binding until judicially determined to be void, added that in cases where the legislature itself fixed the rates, a bill in equity was impracticable because there was no public functionary or commission which could be made to respond, and the companies, if they were to have any relief, must have the right to raise the question by way of defense to an action for penalties. This remark was unneces-

[1] 156 U. S. 649. [1895.]

sary to the decision, since the result of the case on the facts was against the carrier. The remedy by injunction to restrain legal officers of the state from prosecuting, came later.

The same principle that applies to the case of a carrier, applies also to a turnpike company. In *Covington, etc., Turnpike Company v. Sandford*,[1] the court held that the facts that the tolls for several years prior to 1890 had not admitted of dividends greater than 4 per cent on the par value of the stock; that the proposed reduction would so diminish the income of the company that it could not maintain its road, meet its ordinary expenses, and earn any dividends whatever for stockholders, showed that the constitutional rights of the turnpike company were violated. Justice Harlan was careful to say that a mere failure of the rates to suffice to earn four per cent on the stock would not justify holding the rates to be void. "It cannot be said," he added, "that a corporation is entitled, as of right, and without reference to the interests of the public, to realize a given per cent upon its capital stock. . . . The public cannot properly be subjected to unreasonable rates in order simply that stockholders may earn dividends." In dealing with the question how the reasonableness of rates was to be ascertained, the court was not very satisfactory. The inquiry was said to involve a consideration of the right of the public to use the road on paying reasonable tolls, and also of the reasonable cost of maintaining the road in good condition for public use, and the amount that may have been really and necessarily invested in the enterprise. It was held that there might be other circumstances, not then necessary to state; that each case must depend upon

[1] 164 U. S. 578. [1896.]

its special facts; and justice might require different rates for different roads. In short, the opinion merely holds that rates must be reasonable and fair both to the public and the company and must not be so low as practically to deprive the company of its property. No standard was fixed, and the case decided only that the particular rates infringed the constitutional provision. The language of the court indicates that it is the actual and necessary investment of the company that is to be considered. This seems to mean the actual necessary cost as distinguished from cost of replacement or present value.

The results reached up to this point may be thus summarized. State enactments or regulations establishing rates that will not permit of the carrier earning such compensation as under all the circumstances is just to it and the public, infringe the provisions of the Fourteenth Amendment; and the question whether rates are so unreasonably low as to deprive the carrier of its property cannot be conclusively determined by the legislative authority of the state, but may be the subject of judicial inquiry.

III

These general principles do not go far to solve the question in a particular case. The decision in the Nebraska Maximum Rate Cases [1] took a further step. It was contended on behalf of the State that the compensation to be allowed the carrier after payment of operating expenses was purely a question of public policy to be determined by the legislature and not by the courts. "It cannot be successfully contended," said counsel for the State, "that so long as the rate

[1] Smyth v. Ames. Smyth v. Smith. Smyth v. Higginson, 169 U. S. 466. [1898.]

fixed pays something above operating expenses to the corporation for the carrying of property, it amounts to the taking either of the use or of the property." "It must follow then, that, so long as the rate fixed by the law will pay the operating expenses when economically administered, and something in addition thereto, the power of the court ends, and the extent to which rates must produce profits is one of political policy." In short, the contention was that the right of property in a railroad consisted in the title and possession and the privilege to operate it economically, with the right to such additional compensation, however small, as the legislature chose to allow from time to time. The successful maintenance of this proposition would plainly have ended the control of the courts over the subject. It went to the very root of the matter. It might logically be contended that a property right that was subject to legislative regulation, as settled by the Granger Cases, was not taken away when the legislature did in fact regulate; but it was nevertheless true that the power to regulate was not a power to destroy. The case involved really a definition of the word "property" as applied to a common carrier; and in view of the earlier decisions, the court very naturally answered the contention of counsel by saying:

> The idea that any legislature, State or Federal, can conclusively determine for the people and for the courts that what it enacts in the form of law, or what it authorizes its agents to do, is consistent with the fundamental law, is in opposition to the theory of our institutions. The duty rests upon all courts, Federal and State, when their jurisdiction is properly invoked, to see to it that no right secured by the supreme law of the land is impaired or destroyed by legislation. This function and duty of the judiciary distinguishes the American system from all other systems of government. The perpetuity of our institutions and the liberty which is enjoyed under them depend, in no small degree, upon the power

given the judiciary to declare null and void all legislation that is clearly repugnant to the supreme law of the land.

The definition of "property" becomes, therefore, in the last resort a matter for the courts.

The Nebraska case involved also the question of rates within a state over railroads extending through other states. It was said that rates reasonable in Iowa might be unreasonable in Nebraska since the density of population, and hence of traffic, might be greater in the former, while the cost of construction and maintenance might be less. It was held that the reasonableness of rates on traffic wholly within the state must be determined without reference to the interstate business done by the carrier or to the profits derived from it. "The argument that a railroad line is an entirety; that its income goes into, and its expenses are provided for out of a common fund, and that its capitalization is on its entire line, within and without the state, can have no application where the State is without authority over rates on the entire line, and can only deal with local rates and make such regulations as are necessary to give just compensation on local business." Whether the attempt thus made to sever the intrastate from the interstate business can be carried out successfully is a question involved in later litigation and not yet settled. It involves a determination of the proportion of value of plant and cost of traffic to be attributed to the lines within the state. In view of the interaction of the various elements of cost and of revenue within and without the state upon each other, the problem is most difficult, and may prove possible of solution only by an approximation.

The Court in the Nebraska case considered also the question on what amount the railroads were en-

titled to earn a revenue. The companies contended that they were entitled to such rates as would enable them at all times, not only to pay operating expenses, but also to meet the interest regularly accruing upon all outstanding obligations and to justify a dividend on all their stock; less than that, it was said, would deprive them of property without due process of law. The court held, however, that this contention practically excluded from consideration the fair value of the property used, omitted the right of the public to be exempt from unreasonable exactions, would justify the railroad in trying to earn interest on bonds in excess of its fair value and dividends on fictitious capitalization. The court was still indefinite in laying down the basis of the valuation on which earnings might fairly be had. It said the rights of the public would be ignored if rates were exacted without reference to the fair value of the property used for the public or the fair value of the services rendered. But these two bases of calculation are far from leading to the same result. To base rates upon the value of the property, involves the value of the plant in its entirety and the net result of all the rates on thousands of items. To base them upon the value of the services rendered, involves a consideration only of particular items and may involve a consideration of the value of the services to the shipper. The two methods are incommensurate. What the Court decided was that the basis of all calculations as to the reasonableness of rates must be the fair value of the property used; that in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of the bonds and stock, the present as compared with the original cost of construction, the probable earning

capacity of the property under the particular rates prescribed, and the sum required to meet operating expenses, are all matters for consideration, to be given such weight as may be just and right in each case. Justice Harlan was careful to add: "We do not say that there may not be other matters to be regarded in estimating the value of the property."

Many of these elements required and have received and are destined to receive further definition and analysis. What other elements are to be considered may never be finally settled, so infinitely various are the circumstances that distinguish each case as it arises.

The court soon had occasion to apply the rule, and the opinion shows no greater certainty in the basis of valuation.[1] A water company insisted that the court should consider the cost of the plant, the annual cost of operation including interest on money borrowed and reasonably necessary to be used in constructing the same; the annual depreciation of the plant from natural causes resulting from its use; and a fair profit to the company either by way of interest on the money expended for the public use, or upon some other fair and equitable basis. All these matters the court conceded ought to be taken into consideration, but it held that the basis of calculation was defective in not requiring the real value of the property and the fair value in themselves of the services rendered to be taken into consideration. The opinion, however, points to no more definite rule. "What the company is entitled to demand," says the court, "in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public." This adopts present value

[1] San Diego Land Co. v. National City, 174 U. S. 739. [1899.]

as the standard, but leaves unsettled how the reasonable value of the property is to be ascertained, and what is a fair return.

The opinion in the next case[1] sought to make a distinction between public service companies and companies which without any intent of public service have placed their property in such a position that the public has an interest in its use. As to the first class, Justice Brewer said the owner intentionally devoted his property to the discharge of a public service, and undertook that which is a proper work for the State, and might be said to accept voluntarily all the conditions of public service which attach to like service performed by the State itself. As to the second class the owner placed his property in such a position willingly or unwillingly, that the public acquire an interest in its use, but he submits only to those necessary interferences and regulations which the public interests require. Of the former it was said that since the State was not guided solely by a question of profit but might conduct the business at a loss having in view a larger general interest, so perhaps an individual who had shown his willingness to undertake the work of the State might be held to perform that service without profit. The suggestion was put in the form of an interrogation, since it was confessedly unnecessary in the pending case to determine the question. It seems to conflict with *Smyth v. Ames*, and the court has never yet decided that the legal right of regulation goes to this extent. The decided case involves a corporation of the other class, which was not doing the work of the State, was not performing a public service, and had acquired from the State none of its governmental powers. The business was that of a

[1] Cotting v. Kansas City Stock Yards Co., 183 U. S. 79. [1901.]

stock yard at Kansas City. The business was held to be so affected with a public interest, being at the gateway of a great commerce of which it was an important if not a necessary adjunct, that its charges like those of a grain elevator were subject to public regulation. But the court said the "business in all matters of purchase and sale is subject to the ordinary conditions of the market and the freedom of contract. He (the owner) can force no one to sell to him, he cannot prescribe the price which he shall pay. . . . If under such circumstances he is bound by all the conditions of ordinary mercantile transactions, he may justly claim some of the privileges which attach to those engaged in such transactions. And while he cannot claim immunity from all state regulation, he may rightfully say that such regulation shall not operate to deprive him of the ordinary privileges of others engaged in mercantile business." The difference in practical result suggested in the opinion is that in the case of a business affected with a public interest altho not devoted to the public service, the state's regulation of charges is not to be measured by the aggregate of profits determined by the volume of business, but by the question whether any particular charge to an individual dealing with him is, considering the service rendered, an unreasonable exaction. "The question is not how much he makes out of his volume of business, but whether in each particular transaction the charge is an unreasonable exaction for the services rendered. He has a right to do business. He has a right to charge for each separate service that which is reasonable compensation therefor, and the legislature may not deny him such reasonable compensation, and may not interfere simply because out of the multitude of his transactions the amount of his profits

is large. Such was the rule of the common law even in respect to those engaged in a quasi public service independent of legislative action. In any action to recover for an excessive charge, prior to all legislative action, who ever knew of an inquiry as to the amount of the total profits of the party making the charge?"

The distinction suggested by Justice Brewer and his expressions with reference to the subject are interesting and suggestive; but the opinion was not the opinion of the court. Six out of nine judges assented to the judgment upon the ground that the Kansas statute violated the Fourteenth Amendment because it applied only to one stock-yards company, and not to other corporations engaged in like business in Kansas, and therefore denied to that company the equal protection of the laws. They were careful to say that they expressed no opinion upon the question whether it deprived the company of its property without due process of law. This, and not Justice Brewer's elaborate opinion, expresses the view of the court. Under the facts of the case it amounted to saying that the answer was doubtful to the question whether rates that enabled a company to earn 5.3 per cent on the value of the property used for stock-yards purposes, instead of about 10 per cent previously earned, amounted to depriving it of property without due process of law; the propriety of any rate of return was not decided.

The suggestion that a public service company, doing the work of the state, might properly do it for an unremunerative rate bore fruit in the Minnesota Coal Rate case.[1] That case is important because it sustained an unremunerative rate upon coal fixed by the state commission. The ruling is in conflict with the reasoning of *Smyth v. Ames* (the Nebraska

[1] Minneapolis & St. Louis R'd Co. v. Minnesota, 186 U. S. 257. [1902.]

cases) and the court recognizes the necessity of explaining the distinction. It says that while the reasonableness or unreasonableness of rates for intrastate traffic must be determined without reference to the interstate business, it does not follow that the companies are entitled to earn the same percentage of profits on all classes of freight carried. This hardly justifies the conclusion that the carrier may be compelled to carry some goods at a loss; for if so, the power to select those goods involves a power to discriminate quite at variance with fundamental principles; if the railroad can be compelled to carry coal at a loss, it may also be compelled to carry other goods at a loss; and since it is entitled to a fair return upon the whole business, this loss must be made up by the imposition of a heavier rate on other goods than would naturally fall thereon; the public authorities are then permitted to discriminate against some shippers and in favor of others, a discrimination which has always been condemned, and was held to be illegal by the New Jersey Supreme Court,[1] upon the ground that carriers were engaged in a public employment, three years before the United States Supreme Court decided the Granger Cases.

The court in the Minnesota Coal Rate Case sought to justify the losing rate upon the ground that for purposes of ultimate profit and of building up a future trade, railways carry both freight and passengers at a positive loss. No doubt such is the fact, and if railways were to be left free to fix rates according to their own pleasure, and to discriminate at their pleasure between shippers, the practice of sowing seed to reap a future crop might be permissible. The difficulty is that considerations of that kind are not reducible to a legal rule, but involve considerations of business policy.

[1] Messenger v. Pennsylvania R. R. 700, 407. [1873.]

It is not only difficult to determine how much of the value of an entire railroad shall be attributed to the portion within a state, but since even that portion is used in part for intrastate and in part for interstate traffic, the value of the property used for local and for through traffic must also be determined; and since all the business is done by the same men, with the same equipment, the total cost of conducting the business must also be apportioned. As might be expected from the intricacy of the problem, the results thus far reached are not satisfactory. In the Gill case it was held that every mile need not pay; from which it would seem to result that the system must be treated as an entirety, and that losses on local traffic might be balanced by profit on through traffic or vice versa. *Smyth v. Ames* decided the contrary, and made necessary the determination of the proper basis for apportionment of value and cost. The South Dakota case [1] rejected gross receipts as a proper basis for the apportionment. The other basis suggested is that of the volume of traffic determined according to ton mileage. The tendency of the more recent cases in the lower federal courts seems to be in the direction of apportioning cost and value according to gross receipts. The question is still unsettled in the Supreme Court. In the Florida Phosphate cases,[2] the court leaned to the ton mile basis, at least as far as concerns the cost of doing the business.

The question to be decided when the protection of the Fourteenth Amendment is invoked, is whether the rates as a whole afford a sufficient return, or are so low as to amount to confiscation. When, as in the

[1] Chicago, M. & St. P. R'y. v. Tompkins. 176 U. S. 167.

[2] Atlantic Coast Line v. Florida, 203 U. S. 256. [1906.] Seaboard Air Line v. Florida, 203 U. S. 261. [1906.]

South Dakota Coal case or the Florida Phosphate cases, the rate upon a single article only is involved, it is impossible to determine the effect of that single rate upon gross or net returns on the entire traffic, and hence impossible to prove that the rate fixed is so low as to amount to confiscation. Such was the result in the Florida Phosphate cases, and it is quite conceivable that the court might be forced to decide that one unremunerative rate after another was not in conflict with the property right of the carrier, until an entire schedule of unremunerative rates might have been sustained. In the Phosphate cases the question did not arise, since the rate permitted exceeded the average receipts per ton per mile under the previous tariff. But the possibility of the result I have indicated illustrates the danger of the decision in the Minnesota Coal case, that a carrier may be required to carry a particular commodity at an unremunerative rate.

IV

The reasonable value of the property used was by 1903 pretty well recognized as the proper standard upon which returns may be earned. In *San Diego Land & Town Co. v. Jasper* [1] the court said: "It no longer is open to dispute that under the Constitution what the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public." That standard is adopted as against a standard based on actual cost, less depreciation. Actual cost, selling price, valuation for taxation, may all be evidence of the actual value. But actual value may sometimes be enhanced by the

[1] 189 U. S. 439. [1903.]

fact that the plant is larger than is needed. Is the company entitled to earn a revenue on an unnecessary expenditure? To this question, the court answers, no. Upon the value as fixed by the local board, rates were fixed with the intention of securing a yield of 6 per cent. The court found no sufficient evidence that this rate was confiscatory. But the local board had fixed the rates as if the water company supplied the whole 6000 acres outside the city for which the works were intended. In fact it supplied less, and its receipts were therefore less than the supervisors estimated. The result might give the appellant less than 6 per cent on the value of the plant. But the court said that if the plant was built for a larger area than it could supply, the Constitution did not require that two-thirds of the contemplated area should pay a full return. The case is therefore important because it holds that a failure to pay 6 per cent on present value is not necessarily decisive of the question whether rates are confiscatory so as to violate the constitutional provision. The present value on which the company is entitled to a return is only the present value of what is reasonably necessary for the public service.

A water company in California [1] was incorporated under a statute which empowered the county board of supervisors to regulate rates, but not to reduce them so low as to yield to stockholders less than 1½ per cent a month on the capital actually invested. After the company had invested about a million dollars in its plant, a new statute empowered the supervisors to so adjust the rates as to yield not less than 6 nor more than 18 per cent per annum upon the value of the property actually used and useful

[1] Stanislaus County v. San Joaquin and King's River Canal and Irrigation Co. 192 U. S. 201. [1904.]

for the supply of water. The court held that there was no contract the obligation of which was impaired, and that even if there was a contract, the legislature might alter or amend the original statute under its reserved power. For our present purpose the important point decided is that it is not a confiscation nor a taking of property without due process, nor a denial of the equal protection of the laws, to fix water rates so as to give an income of six per cent upon the then value of the property actually used, even tho the company had prior thereto been allowed to fix rates that would secure to it 18 per cent upon the capital actually invested. The right of property of a water company under the California statute, so far as it is protected by the Fourteenth Amendment, is no more than a right to earn 6 per cent on present value, regardless of actual investment or previous statutory provisions permitting a larger return.

The method of determining present value still remains to be settled. To ascertain the value of tangible property, such as lands or buildings, for the purpose of determining the just compensation required to be made when it is taken for public use, has always been a sufficiently difficult question. To ascertain the value for the purpose of determining whether a schedule of rates is confiscatory is more difficult still.

In the Knoxville Water Company case,[1] the value had been based on cost of reproduction, to which there was added $10,000 for organization and promotion expenses, and $60,000 for value as a going concern. The court declined to decide upon the propriety of including these two items in the estimate, and expressly reserved them for consideration when the question necessarily arose. The Knoxville case turned

[1] Knoxville v. Water Co., 212 U. S. 1. [1909.]

upon the failure of the court below to make a proper deduction for depreciation arising from age and use. It was held that the water company was not entitled to value an old plant as if it were a new one. The more interesting question was as to the right of the company to add to the present value of its plant the cost of what had been lost through destruction or obsolescence, and what had been impaired in value altho still in use. There was little discussion of the question in the opinion, no doubt because the circumstances of the particular case did not call for discussion. The court held that it was the duty of the company to use enough of its earnings to keep its plant good, before coming to the question of the amount of its profits, and that if it failed to keep its investment unimpaired, whether because it declared unwarranted dividends on over-issues of securities, or because it failed to exact proper prices for its output, it could not enhance the present value of its property by the addition of the costs of its mistakes. The question is likely to arise, as it has already in some cases, in a more difficult form, where fruitless but necessary experiments have been made, or plant has become obsolete in a rapidly advancing industry before it could possibly be made good out of current earnings. It arose before the Interstate Commerce Commission, in the converse case where the corporation, in order to reduce its apparent rate of earnings, sought to charge against current earnings the cost of betterments from which it was likely to profit for years to come. The Supreme Court approved the ruling of the Interstate Commerce Commission and held that the instrumentalities that are to be used for years should not be paid for by the revenues of a day or year.[1] A public

[1] Illinois Cent. R. R. v. Inter. Com. Comm. 206 U. S. 441. [1907.]

service company cannot use more money in a year than is required for actual depreciation, and carry the excess as an addition to capital for the purpose of estimating the amount on which it is entitled to dividends, in determining whether a rate is confiscatory.[1] Novel questions of this character will arise with increasing frequency, and require the most careful consideration. Like most other questions in every department of the law, they are in their origin rather questions of fact than questions of law, altho in course of time the rules become settled and thus become rules of law. In their origin, and as yet, many questions are questions of sound business management and engineering science. The law prescribes reasonable returns upon a reasonable valuation. What is a reasonable return and what is a reasonable valuation must vary with the circumstances of each particular case.

The basis of present value adopted in the Knoxville Water Company case was cost of reproduction less an allowance for depreciation in order to make up the difference between the value of new and old. Such a basis in the case of land, especially in a growing city, tends to make the cost of reproduction exceed the original cost, and in the case of railroads especially is almost sure to make present value greatly in excess of cost to the companies. It has therefore been contended with much ingenuity and force that the basis for rate regulation should not exceed the capital actually invested. In *Willcox v. Consolidated Gas Co.*,[2] it was argued that one gas company should not be permitted to charge more than another for the sole reason that movements of population, uninfluenced by either

[1] Louisiana R. R. Comm. v. Cumberland Tel. Co., 212 U. S. 414. [1909.]

[2] 212 U. S. 19. [1909.]

company, had caused the site of its plant to be more valuable if vacated and sold; for it was said that altho the fortunate company was entitled to obtain the full value of the land when sold, the unrealized profit meanwhile did not represent profit used in the manufacture and distribution of gas, but rather represented wealth which the manufacture and distribution of gas keeps out of use. This argument seems sound. The circumstances of the case did not call for an answer by the court. It did, however, distinctly reject the basis of actual cost even in the case of land. It held that the value of the property must be determined as of the time when the inquiry was made regarding rates; that the company was entitled to the benefit of any increase of value. That is in harmony with the general rule of law which permits the owner of real estate to profit by any increase in the value of his land. Obviously, however, if we are to uphold the rule that a public service corporation is entitled only to a reasonable return and that the public are entitled to be served at reasonable rates, we must apply the rule of reasonableness to the amount of the investment, as was done in the San Diego Water case. The court recognized this, for it said there might be an exception to the rule where the property had increased so enormously in value as to render a rate permitting a reasonable return upon such increased value unjust to the public. This makes the reasonableness of the amount allowed for value of the property depend on the reasonableness of the rate to the public; but since the rate must afford a reasonable return to the company also, we are at once reasoning in a circle. The basis suggested by Mr. Whitney, in his argument as counsel, seems a better one, — that the value allowed should be the estimated cost

of replacing the land in use with other land capable of accomplishing the same result. Probably no one would contend that if a gas company had been so fortunate as to locate its works at the corner of Broad and Wall Streets, and its land had attained the enormous value that there prevails, it should be entitled to a return from its gas sales on the present value of the site. Prudent management would require removal to a less expensive site better adapted for the business.

The more difficult question that arose in the Gas Company case was the valuation of the franchise. As to the general question of the propriety of including the value of the franchise in the valuation of the property, the opinion gives little light. All that was decided was that it was proper to include in the valuation, the value attributed with the consent of the state to the franchises at the time of the consolidation of the companies, upon which investors had relied; and that it was wrong to hold, as the court of first instance did, that the value of the franchise had increased in the same ratio as the value of the tangible property. When it came to the general question, the court said that to allow for increased value of the franchise was too much a matter of pure speculation and also opposed to the principle upon which such valuation should be made. Whether the court meant merely that the evidence in the particular case was not sufficiently certain to justify the increased valuation, or whether it meant that upon principle the valuation of the franchise ought not under ordinary circumstances to be included, the opinion leaves in doubt.

The court calls attention to the fact that the franchise was subject to the legislative right to so regulate the price of gas as to permit no more than a fair return upon the reasonable value of the property. It would

have been but a step to hold that to base the return to the company upon the value of such a franchise would be impossible, since the value of the franchise in turn depended on the rates. The two being dependent, one on the other, neither could furnish a substantial basis for fixing the other. As Judge Savage well said in a case in Maine [1] "to say that the reasonableness of rates depends upon the fair value of the property used and that the fair value of the property used depends upon the rates which may be reasonably charged seems to be arguing in a circle." There is, however, as he points out, a sense in which the value of the franchise must be considered. It is the franchise, the right to operate and if possible to earn a dividend, that makes the difference between a lot of junk, — old rails, pipes, and the like, — not worth recovering from their situation in and upon the ground, and a completed plant, railroad, water works, gas works, as the case may be. This is a part of the value of a going concern, the allowance for which the court refused to pass upon in the Knoxville Water Co. case. Even tho the franchise is revocable, the fact that the plant has a legal right to exist gives added value to the physical structures. The value of a rightfully existing structure which may be lawfully used is very different from the value of the same structure without the legal right to use it for the purpose for which it was assembled. Quite recently, in the valuation of the Omaha Water Works,[2] the court has expressly approved an appraisal of the value as a going concern. "The difference between a dead plant and a live one," said Justice Lurton, "is a real value, and is independent of any franchise to

[1] Brunswick & T. Water District v. Maine Water Co., 59 Atl. Rep. 537. [1904.]

[2] Omaha v. Omaha Water Co., 218 U. S. 180. [1910.]

go on, or any mere good will as between such a plant and its customers."

Altho ordinarily the value of a franchise is not enhanced by the prospective profit from any particular schedule of rates, there is an exception where by reason of a contract protected by the contract clause of the federal constitution, the corporation may continue to charge specified rates for a definite time.[1] The courts insist on finding the elements of a contract as they would between individuals. There must be an agreement upon sufficient consideration. Where the contract is made by a municipality, there must be legislative authority in the municipality to make the contract; and such legislation is construed strictly in favor of the public; authority to fix and determine rates does not authorize a municipality to make a bargain by which it ties itself up for the future.[2] Another exception may be suggested, — the investment by present owners in reliance upon the continuance or value of the franchise. To what extent, if at all, this element may enter into the calculation has not been expressly decided, nor does the Gas Company case settle the question. It settles indeed that under some circumstances such allowance must be made; but no attempt is made to define the circumstances with precision.

[1] Los Angeles v. Los Angeles City Water Co., 177 U. S. 558 (1900); Detroit v. Detroit Citizens Street Railway Co., 184 U. S. 368; Cleveland v. Cleveland City Ry. Co., 194 U. S. 517 (1904); Cleveland v. Cleveland Electric Railway Co., 201 U. S. 529 (1906); Vicksburg v. Vicksburg Water Works Co., 206 U. S. 496 (1907). See also New Orleans Water Works Co. v. Rivers, 115 U. S. 674 (1885); (sustaining an exclusive right to supply water); New Orleans Gas Co. v. Louisiana Light Co., 115 U. S. 650 (1885); (sustaining an exclusive right to supply gas); Walla Walla v. Walla Walla Water Co., 172 U. S. 1 (1898).

[2] Freeport Water Co. v. Freeport City, 180 U. S. 587 (1901); Danville Water Co. v. Danville City, 180 U. S. 619 (1901); Rogers Park Water Co. v. Fergus, 180 U. S. 624 (1901); Knoxville Water Co. v. Knoxville, 189 U. S. 434; Home Telephone Co. v. Los Angeles, 211 U. S. 265 (1908).

The court held that the Gas Company case was not one for the valuation of good will because the complainant had a monopoly in fact and the consumer must take gas from it or go without; he must resort to the old stand whether he would or no. The court held also that there was no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises; the amount of risk, the locality where the business is conducted, the rate expected and usually realized there upon investments similar in character, were all mentioned as factors, and it was held that under the circumstances of the gas business in the City of New York, six per cent was a proper return.

The element of wages of superintendence, which Mr. Whitney in his argument conceded must be covered by the returns to the company, was left out. In one sense this is not a return upon capital but wages of labor, and if it were possible for earnings due to the skill with which the business is managed to be secured to those alone whose skill produced the result, perhaps no more need be said. Practically, however, the earnings depend in part, sometimes in large part, not upon the skill in actual present-day management, but upon the satisfaction with which the public has been served in the past, perhaps by men long since dead. Given equal and reasonable rates, one company will be able to earn large dividends, and another perhaps unable to pay its way; and this result may be due not to any less efficient management, but merely to the fact that one has been long in satisfactory operation while the other is new and not yet in vogue. The greater earnings of the one may even be due to the mere caprice of fashion. But to whatever

cause it is due, difficulty will arise unless allowance be made, either by increasing the capital valuation on which the company is permitted to earn a return, by way of a valuation of a going concern or the value of the probability of an already assured income, or else by allowing an additional return on the valuation minus this increment, by way of extra compensation for the greater skill or the greater satisfaction with which it serves the public. Even in the case of so close a monopoly as the Gas Company in New York City, it is not impossible that some of its earnings may have been due to this cause; for altho it had a monopoly of the supply of gas through pipes in the streets, it may have had competition, in the supply of light, heat, and power, from the electric companies. Altho legally permissible, it would often be impracticable to cut down rates to a level that would afford a fair return to one company upon a valuation that failed to take into account the element of value of a going concern or an assured income, without ruining its weaker competitor. In some cases such lowering of rates would prove inadvisable, especially in the case of railroads. One road may through fortunate investments, the discovery of valuable minerals along its route, the opening of fertile territory, and a rapid increase of population, prove a highly profitable investment; another at the same rates may barely pay its way; yet to cut down rates on the prosperous road so as to reduce its high dividends to a normal level, would emphasize and accentuate the advantage already possessed by those along its line over those along the line of the less prosperous road. Either the prosperous road must be allowed to earn a higher return upon the valuation or the valuation must allow for these elements.

Up to the present time, the United States Supreme Court has not been called upon to decide what elements are proper to be considered in determining the present value of a plant of a public service company. That the value of the plant as a going concern, not only ready for business but with business actually established, is greater than the bare cost of reproduction of the physical plant, is recognized by cases in other courts. It must be so, leaving out of view altogether the element of good will, which in the case of a strict monopoly ought to be disregarded. A going concern has necessarily expended money in various ways aside from the cost of physical plant in order to get going. The cost of promotion of the enterprise, of corporate organization, of obtaining the necessary franchises, permissions, and consents, of securing the necessary connections with other companies by rail or wire; the cost of experiments necessary in every new industry, and the often rapid substitution of improved appliances before the cost of the old can have been recouped out of earnings; the cost of developing the business including the oft-times necessary loss attending the incomplete stage of the plant, or the introduction of new appliances and methods; the cost of financing the enterprise, including interest on capital sunk before any returns begin to come in, — all go to make up the cost of a complete going plant, and are all expenses that a new enterprise must needs incur.

The United States Supreme Court has not as yet been called upon to analyze the costs of operation and to decide what items of cost of operation ought to be included in the annual charges before the profit can be ascertained. Professor Wyman has dealt with

the subject in a satisfactory way [1] and the scope of this article does not call for its further discussion.

The question presented by a schedule of rates under the Fourteenth Amendment is whether the schedule permits a fair return upon a reasonable valuation or is so low as to amount to confiscation. This involves different considerations from those involved when the only question is the propriety of the rate on a single article. It cannot be foretold what effect a change of certain rates, for example on coal or gas, will produce on the net revenue of the business as a whole. This difficulty has been met by the adoption of a tentative course, leaving it for time and experience to determine whether constitutional rights have been infringed.[2]

A most serious difficulty is presented by our dual form of government. It is beyond the scope of the present discussion to treat the numerous cases dealing with the commerce clause, and the question what is interstate and what is intrastate commerce. The net return to a railroad company, — and it is to railway traffic that the questions most frequently relate, — depends on the relation between its income from whatever source derived and its outgoes whether for the conduct of interstate or intrastate business. The two are inextricably intermingled, and the problem of preserving the rights and powers of both the state and the federal governments is one of the problems of the future.

FRANCIS J. SWAYZE.

SUPREME COURT
OF NEW JERSEY.

[1] Wyman on Public Service Corporations, § 1150 ff.

[2] Willcox v. Consolidated Gas Co. 212 U. S. 19; Northern Pacific R'y v. North Dakota. 216 U. S. 579.

NATIONAL AND DISTRICT SYSTEMS OF COLLECTIVE BARGAINING IN THE UNITED STATES

SUMMARY

I. Rapid increase of systems of collective bargaining after 1897, 425. — List of systems established and terminated from 1898 to 1911, 427. — II. Success or failure of these systems to some extent independent of the character of the system, 429. — Classification of systems on basis of area of wage rates, 431. — Greater success of systems under which national or district rates are fixed, 433. — III. Desire of employers to bring working rules of national union under joint determination, 435. — Difficulty of achieving this under systems in which only local rates are fixed, 438. — IV. Tendencies favoring establishment of national and district rates of wages, 440. — Circumstances under which systems with only local rates may succeed, 443.

I

The year 1898 marks the opening of what is in many ways a distinct period in American trade-union history. The rapid increase in the number of unionists which began in that year was accompanied, not only by important changes in the structure and aims of American trade unionism, as has always been the case in similar periods of expansion, but also by changes in the relations of the unions to employers. The establishment of a large number of national and district systems of collective bargaining has been one of the most characteristic features of the period.

In 1897 national and district systems of collective bargaining were in force in the iron, tin, and steel trade, in the stove-molding trade, and in the flint glass, glass bottle, and window glass trades. All of these systems had been established before the industrial depression which began in 1893 and which entirely

stopped the growth of trade unionism. In 1897 the annual conferences between the Amalgamated Association of Iron, Steel, and Tin Workers and various groups of manufacturers had been in existence more than a quarter of a century. For almost as many years the unions in the glass trades — the Flint Glass Workers, the Glass Bottle Blowers, and the Window Glass Workers — had held conferences with more or less formally organized groups of employers for settling the conditions of employment. The well-known system of collective bargaining between the Iron Molders' Union and the Stove Founders' National Defense Association was established in 1891.

With the revival of industry and the increase in the number of unionists in 1898, industrial disputes increased. The number of strikes and lockouts in 1898 was 1,098, involving 263,219 persons; in 1900, 1,839, involving 567,719, and in 1903, 3,648 involving 887,834.[1] As a result of the increase in strikes, a widespread movement for the peaceful settlement of the conditions of employment was inaugurated. The National Civic Federation held conferences in 1900, 1901, and 1902 on the subject of industrial conciliation. Similar meetings were held by other organizations — notably the National Convention of Employers and Employees at Minneapolis, September 22–25, 1902. Employers' associations were organized in a number of trades for the peaceful settlement of labor questions, and a considerable number of employers' associations formed originally for other purposes began to negotiate with the unions.

As a result of this movement, national and district systems of collective bargaining were established and

[1] Twenty-First Annual Report of the Commissioner of Labor, 1906; Strikes and Lockouts, pp. 15, 21.

extended very rapidly for a few years after 1897. The interstate conferences in the Central bituminous coal fields, which had been entirely suspended since 1894, were resumed in 1898. In 1899 the National Founders' Association concluded the New York agreement with the Iron Molders. In 1900 the National Metal Trades' Association entered into a similar agreement with the Machinists; the Longshoremen concluded their first agreements with the Lake Erie Dock Managers and with the Lake Carriers' Association, and the Potters began to hold periodic conferences with the United States Potters' Association. In 1901 the American Newspaper Publishers' Association entered into "arbitration agreements" with the Typographical Union, the Pressmen, and the Stereotypers. In 1902 the United Typothetae and the Pressmen agreed to settle all questions by conference or arbitration, and the Stove Founders' National Defense Association extended their conference system to include the Stove Mounters and the Metal Polishers.

The following list shows the systems of national and district collective bargaining established from 1898 to 1911, and also the years in which certain of these systems terminated: —

	Date of Establishment	Date of Termination
United Mine Workers		
Joint conferences in Central field	1898	
Joint conferences in Southwestern field .	1903	
Iron Molders' Union		
with National Founders' Association ...	1899	1904
Brotherhood of Operative Potters		
with United States Potters' Association	1900	
with Sanitary Potters' Association	1901	
International Longshoremen's Association		
with Lake Erie Dock Managers	1900	1908
with Lake Carriers' Association	1900	1908
with Lumber Carriers' Association	1901	
with Great Lakes Towing Company ...	1903	

	Date of Establishment	Date of Termination
with Tug and Dredge Owners' Protective Association	1903	
with Pile Drivers' Owners Protective Association	1904	
with Lake Erie Fish Packers and Fish Tug Owners	1905	
International Association of Machinists		
with National Metal Trades Association	1900	1901
American Newspaper Publishers' Association		
Arbitration agreement with International Typographical Union	1901	
with International Printing Pressmen's Union	1901	
with International Stereotypers' and Electrotypers' Union	1901	
with International Photo-Engravers' Union	1905	
United Typothetae		
with International Printing Pressmen's Union	1902	1907
Stove Founders' National Defense Association		
with Stove Mounters' International Union	1902	1907
with Metal Polishers' Union of North America	1902	1909
Structural Steel Erectors' Association		
with International Association of Bridge and Structural Iron Workers	1903	1905
Lake Seamen's Union		
with Lumber Carriers' Association	1903	1908
with Lake Carriers' Association	1903	1908
Marine Engineers' Beneficial Association		
with Lake Carriers' Association	1903	1908
Lithographers' International Protective and Beneficial Association		
with National Association of Employing Lithographers	1904	1906
Coopers' International Union		
with Machine Coopers Employers' Association	1905	
United Hatters of North America		
with National Association of Fur-Felt Hat Manufacturers	1907	1908
Wall Paper Manufacturers' Association		
with Machine Printers and Color Mixers	1909	

An inspection of the list shows that the establishment and extension of systems of collective bargaining went forward rapidly during the years 1898–1905 inclusive. But from 1906 to 1911 only two new systems were established — that of the Hatters and the Fur-Felt Hat Manufacturers in 1907, and that of the Wall Paper Manufacturers and the Machine Printers and Color Mixers in 1909.

II

In considering the causes of the success or failure of different systems of collective bargaining, account must be taken of certain factors which are independent of the kind of system adopted. These factors may be divided into three classes, according as they spring from the personal skill or influence of the men concerned on either side, from the special characteristics of the trade involved, or from the exigencies of the time at which the system is applied. The personal element is, of course, important. A system of collective bargaining may be maintained and strengthened, for a time at least, by the skill of the persons in charge, altho other systems of identical character may quickly break down. In the second place, in an industry in which the unions are very strong, a system of collective bargaining may be maintained altho the system itself is not satisfactory to the employers. Thirdly, the strength of the unions and the desirability to the employer of some peaceful method of settling trade questions varies not only from trade to trade, but also from time to time. In 1897 there were less than half a million unionists in the United States, and in 1904 there were more than two millions. This increase made it difficult for employers in many trades to

secure non-union workmen. In 1899–1903 the establishment and maintenance of some system of bargaining, even if an imperfect one, appeared to many employers to be a desirable consummation. In 1904 the tide of trade unionism slackened, and the number of unionists was greater in that year than in any succeeding year until 1910. The panic of 1907 also materially reduced the hold of the unions on employers. The relatively larger number of dissolutions of systems of collective bargaining which occurred from 1907 to 1909 is explainable by the declining strength of trade unionism.

It is not necessary, however, to adopt the view which is widely held among American unionists that the establishment of systems of collective bargaining was advocated by employers in 1898–1903 merely as a device to prevent rapid increases in wages and the imposition of severe working conditions, and that when the pressure of unionism lessened, employers hastened to put an end to the systems of collective bargaining.[1] It is more reasonable to believe that in 1898–1903 the employers, pressed by the need for workmen and confronted by militant unions, were persuaded by the advocates of industrial peace that there might be established systems of collective bargaining under which the conditions of employment could be reasonably and amicably settled. Experience with the systems of bargaining which they were thus induced to establish soon led employers in several trades to the view that these systems were unsatis-

[1] In his address to the Longshoremen at their convention in 1909, the president of the union, Mr. T. V. O'Connor, said, "The business depression which was felt throughout the entire country in 1908 gave the dock managers the opportunity they desired and made it almost impossible for our members to resist or go on strike against their so-called 'open shop' policy, as there was practically no work to be done and there were four or five men for every job that offered on the docks" (Proceedings of Longshoremen, 1909, p. 21).

factory. Naturally, however, they did not choose in all cases to break off dealings with the unions at the time when the unions were strongest, but seized the opportunity offered by the depression after the panic of 1907 to withdraw from systems of collective bargaining which had proved less satisfactory than had been anticipated.

Even after allowance has been made for the full effect of these factors peculiar to the trade, the time, and the personal element, the history of collective bargaining in the United States during the past fifteen years affords substantial ground for concluding that the success or failure of particular systems of collective bargaining has been determined largely by the character of the system adopted. The systems of national and district collective bargaining operative in the period 1898–1911 fall into two great classes: —

1. Systems under which national or district wage rates are established.

2. Systems under which local wage rates are settled.

The essential difference between the two classes of systems is the difference in the area covered by the wage rates. In systems of the first kind, the rates are fixed by a national or district conference for the whole country or for a district. In systems of the second kind, the rates, altho fixed under a national system, are local rates; and each rate is or may be the subject of a separate decision. Systems of the first kind have proved during the period under consideration more successful and consequently more permanent. An examination of the history of national and district systems of collective bargaining will make this clear.

The systems of the first class established from 1898 to 1911 were those of the Mine Workers, the Potters, the Lake Seamen, the Longshoremen, the Marine

Engineers, the Wall Paper Manufacturers, and the Coopers. Moreover, the systems which were already in operation in 1897, that is, those in the three glass trades, in the iron and steel trade, and in the stove trade, were all of this kind. Some of the systems of this class are less important than they once were. The number of mills represented in the conferences with the Amalgamated Association is much less than in 1897. The once extensive system of conferences between the employers and unions in the longshore and marine trades of the Great Lakes has shrunk until it embraces only a few branches. The extension of the well-established system of conferences between the Stove Founders and the Molders to cover the Stove Mounters and the Metal Polishers did not prove permanent.

It is to be noted, however, that even those systems of this class which have been terminated were effective for a considerable number of years. The conferences between the Longshoremen and the Lake Carriers and the Dock Managers were maintained from 1900 to 1908; those between the Seamen and the Lake Carriers and Lumber Carriers, from 1903 to 1908; those between the Marine Engineers and the Lake Carriers, from 1903 to 1908; those between the Stove Mounters and the Stove Founders, from 1902 to 1907; those between the Metal Polishers and the Stove Founders, from 1902 to 1909. It is also worthy of note that the really important losses were in those systems in which the United States Steel Corporation was an influential factor. The importance of the annual conferences of the Amalgamated Association has diminished since 1897 chiefly because in 1901 and 1909 the union lost control of mills owned by the Steel Corporation. The Pittsburgh Steamship Company, a subsidiary company of the Corporation, is the largest

vessel owner in the Lake Carriers' Association, and the association of Lake Erie Dock Managers is made up largely of the managers of ore docks.

By way of summary, it may be said that systems of the first class, altho some of them have broken down, covered a much larger number of workmen in 1911 than in 1897 and that new systems of this kind, in addition to those in operation in 1897, were established during the period under consideration and so far have maintained themselves in bituminous mining [1] and in the pottery, cooperage, and wall paper trades. The annual conferences in the glass bottle, flint glass, and window glass trades and the conference system of the Molders and the Stove Founders' National Defense Association are unimpaired. The period 1898–1911 marked, therefore, an important advance in the number and extent of such systems of collective bargaining.

The establishment of systems of collective bargaining of the second class, that is, those in which local wage rates are settled under a national system, gives a peculiar interest to the history of collective bargaining since 1897. These systems properly attracted attention from the students of labor problems. It was especially to such attempts to secure industrial peace that Mr. W. F. Willoughby gave attention in his article on "Employers' Associations for Dealing with Labor in the United States," published in this Journal in November, 1905. A more detailed description of systems of this kind forms the central part of Mr. W. F. Hilbert's article on "Employers' Associations in the United States." [2] These systems of collective

[1] In 1906 there was no interstate agreement in the Central field, but agreements for the states were made separately, and in 1908 and 1910 the Illinois operators did not participate in the conferences.

[2] Published in Studies in American Trade Unionism, edited by Hollander and Barnett, New York, 1906.

bargaining were an essentially new departure. If they had been successfully maintained, they would have offered a promising prospect of extending collective bargaining on a national scale into trades in which the establishment of systems of the older type was impossible on account of the wide variations of wages among localities and the consequent impracticability of setting a wage of district or national area.

The outcome, however, has not justified the expectations of the promoters of these systems. In this class, to name them in the order of their establishment, were the systems of the National Founders' Association, the National Metal Trades Association, the American Newspaper Publishers' Association, the United Typothetae, the National Erectors' Association, the Employing Lithographers, the Fur-Felt Hat Manufacturers. Of these only one survives — that of the American Newspaper Publishers' Association. Moreover, in most of the other cases, the life of the system was very short. The agreement of the National Metal Trades Association with the Machinists and that of the Fur-Felt Hat Manufacturers with the Hatters were terminated in a year; that of the Employing Lithographers with the Lithographers, and that of the Erectors' Association and the Structural Iron Workers, in two years; that of the National Founders' Association with the Iron Molders, in five years. The greatest success in the working of systems of this kind was attained in the printing trade. The agreement of the United Typothetae with the Pressmen was effective from 1902 to 1907, and the "arbitration agreement" of the Newspaper Publishers, first entered into in 1901 with the Printers, the Pressmen, and the Stereotypers, has been regularly renewed and was in 1905 extended to cover the Photo-Engravers.

III

In order to understand the weakness shown by systems of the second class, it is necessary to understand the conditions under which they were established, and which they were intended to meet. The growth of trade unionism in any trade is accompanied almost inevitably by centralization of power in the hands of the national union. This development affects the individual employer or the local association of employers in two ways. In the first place, in any conflict with a local union a local employers' association finds itself confronted with the entire strength of the national union. In the second place, the national union tends, even in the absence of a nationally uniform rate of wages, to build up a series of national working rules relating to the length of the working day, the use of machinery, apprenticeship, etc., which are enforced upon local unions in their dealings with employers. The local associations of employers find, therefore, that the local unions with which they deal have no power, even if they desire, to enter into negotiations on such points. The terms of employment are thus fixed in large part in advance of local negotiations. National associations of employers are formed, therefore, in such trades for two purposes: (1) to bring to bear in local disputes on the side of the employers the strength of a national association, (2) to bring under joint determination the working rules established by the national union.

Obviously a national employers' association may be formed exclusively for one of these two purposes, and the history of collective bargaining in the last fifteen years furnishes instances of such associations. The Fur-Felt Hat Manufacturers, for example, from 1903

to 1907 merely attempted to secure modifications in the working rules of the Hatters. At irregular intervals a committee of the manufacturers met either the executive committee of the union or the convention of the union and urged changes in the working rules. The rate of wages was not considered in these conferences, being settled in each locality by the employers and the unions. In 1907, however, the manufacturers and the union entered into an agreement for the settlement of local rates of wages. On the other hand, the American Newspaper Publishers' Association has confined its activities to devising a means for settling disputes as to local rates and local working rules. It has raised at times the question of the modification of national working rules, but has never made it an issue.

But all of the other employers' associations which have established systems of collective bargaining for settling local rates of wages have regarded the modification of the national union's working rules as important. The working rules which are thus brought into question have ordinarily been established slowly and painfully by the national union before the establishment of the national employers' association. At first enforced in only a part of the union's jurisdiction, they have been extended, frequently at the cost of strikes, until they are effective in all union shops. These rules are ordinarily part of the constitution and by-laws of the national union. They have been enacted in exactly the same way as rules for the internal government of the union, and the officers of the union and the members of the union do not differentiate between working rules which are of concern to employers and rules relating merely to the internal affairs of the union. The representatives of the union

have no more power to alter one than the other. It is this confusion of working rules and internal regulations which frequently makes it impossible for the representatives of the unions and of the employers' associations even to understand each other's point of view.

In 1902, for instance, the New York Typothetae, an association of employing book and job printers, in concluding a local agreement with the New York typographical union agreed to refer to the International Typographical Union and the United Typothetae of America, the national association of book and job printers, for settlement by arbitration "such points as conflict with the International Typographical Union laws." The particular issue involved was a rule of the International Union requiring foremen to be members of the union. When the United Typothetae took up this question with the officers of the Typographical Union, it was met by a refusal to arbitrate the point at issue. The officers of the International Union explained that they had no more power to submit the working rules established by the International Union to arbitration than they had to submit the organic law of the union. This explanation was far from satisfactory to the Typothetae. In its report to the convention of the United Typothetae, the executive council, in commenting on the refusal of the national union to arbitrate, said: —

> From this correspondence it will be seen that the International Typographical Union takes the exalted ground that after they have passed a law it is as irrevocable as the laws of the Medes and Persians. While they express at their Birmingham convention and by their communications this year the desire for arbitration, when the first proposition is made to them through one of their local bodies that the question at issue between their members and the employers be arbitrated, they decline to do so on the ground that to arbitrate would be to arbitrate one of their laws, which is impossible of arbitration.

Even when the modification or abrogation of a national working rule, as distinguished from its local enforcement, is the point at issue, it is difficult to make progress under a system of collective bargaining under which only local rates of wages are settled. The national employers' association has ordinarily nothing commensurate to offer in exchange. In the few cases in which some headway has been made, as for example, the agreement between the Metal Trades Association and the Machinists and the agreement between the Typothetae and the Pressmen, these concessions were obtained because it was possible to offer the union the peaceful establishment of a shorter work day. In certain other cases the unions have appraised so highly the introduction of a peaceful method of settling local rates of wages that they have been willing to modify certain of their national working rules.[1] But obviously such occasions are exceptional and recur, if at all, only at considerable intervals. The joint determination of national working rules is not likely to be secured to the desired extent, if the *quid pro quo* which the employers have to offer is of this kind.

In systems of collective bargaining of the first class, on the contrary, the determination of national working rules naturally comes within the power of the national joint conference. The scale of wages is coextensive in application with national working rules,[2] and in the conferences between the employers and the union all

[1] The Lithographers were forced by a lockout in 1904 to enter into an agreement for the "mutual government" of the trade, under which not only local rates of wages, but national working rules were to be jointly determined.

[2] In those unions in which district rates of wages are fixed by district conferences, there is exhibited a strong tendency to make the district a governmental unit and to give it autonomy in many matters. The union working rules in such unions are ordinarily district and not national rules and are therefore coextensive in application with the wage scale.

the factors affecting labor cost come under consideration. The working rules desired by the union, which are national in scope, become an element in the bargain struck between employers and union. If the union wishes to enforce such and such rules, the employers must have such and such concessions in wage rates. The working rules are thus clearly brought into direct connection with the rate of wages. In 1899 Mr. D. A. Hayes, president of the Glass Bottle Blowers' Association of America, in his testimony before the Industrial Commission said: —

> This book contains the price per gross of every bottle made; also rules, and apprentice regulations, hours, etc. This list is not a result of direct legislation in our conventions. We realize that laws which require the consent of comparatively no outside party, such as taxation, insurance, assessment and things of that kind, can be decided in our conventions. We decide upon them. But questions relating to wages, hours, apprentice regulations do, and our officers are instructed to bring them up in the conferences with the employers, where we decide them after arguments on both sides. They are then accepted and approved; hence this book is not the final law of our organization or convention. It is a result of a joint conference with our employers.[1]

The plan of bringing working rules under joint determination is common in greater or less degree to all systems of collective bargaining of the first class.

The difference between the two classes of systems of collective bargaining in this respect may be illustrated from the history of collective bargaining in the Iron Molders' Union. In 1891 that union entered into an agreement with the Stove Founders' Defense Association, which at first merely provided for the settlement of local disputes by conference. But in 1892 it was provided that "the general rate of molders' wages should be established for each year without change." Since that time clause after clause has been

[1] Report of the Industrial Commission, Washington, 1900, vol. vii, p. 102.

added to the agreement, setting forth working rules agreed upon in conference at the time of settling wages for the year. The employers have not always secured the working rules which they desired, but the rules have been powerfully affected by the conferences.

In 1899 the National Founders' Association and the Iron Molders' Union entered into an agreement for the settlement of local disputes. The initial agreement was similar to the initial agreement between the Stove Founders and the union, but in the case of the National Founders' Association the agreement was not extended to include the periodical setting of a national rate of wages. Until its termination the agreement provided merely a mechanism for settling local disputes. In a succession of conferences, conducted by able and experienced employers and union officials, the records of which form one of the most important documents in the history of collective bargaining in this country, the more important national working rules of the union were discussed. It was found impossible, however, to make any progress in reaching an agreement as to working rules. In 1904 the agreement was annulled and the National Founders' Association became and remains a hostile employers' association. The probability of the maintenance of the system would undoubtedly have been much greater, if it had been found possible to entrust to annual joint conferences the setting of a national wage rate.

IV

If the foregoing analysis of the history of collective bargaining in the last fifteen years is correct, the general proposition is established that the success of a national or district system of collective bargaining is far more probable when the scale of wages is a national or

district scale, since only then is it likely that working rules will become subject to joint determination. Unless that is accomplished, employers ordinarily feel that the maintenance of the system is hardly worth while. It follows that the establishment of successful systems of bargaining will depend chiefly upon the extent to which it seems feasible and desirable to establish national or district wage rates. A national wage scale need not, of course, be uniform for the entire country or even for a district. Differentials from a central rate may be recognized as is done in the agreements in the bituminous coal fields. But the rates must be more uniform through the country than is the case at present in many trades. The establishment of nationally uniform rates is usually more practicable where the union is dealing with homogeneous groups of employers, that is, groups in which the employers employ the same classes of workmen and have fairly well standardized establishments. The success of the Stove Founders' system, as has been indicated, was due to the possibility of establishing a national rate; and that possibility was due to the fact that the employers' association with which the union dealt was made up entirely of stove founders. The National Founders' Association, on the contrary, comprises a number of distinct groups of founders, employing different classes of molders. It seems probable that some of these groups, if they had dealt separately with the union, might have found it feasible to establish a national rate of wages for the molders in their employ. In all the systems of collective bargaining of the first kind, the groups of employers with which the unions deal are relatively homogeneous.[1]

[1] The American Newspaper Publishers' Association is a homogeneous group of employers; in few industries do the establishments conform so closely to a single type

In the glass bottle trade, for example, the union signs three separate scales with different groups of employers. The Flint Glass Workers sign eight or ten separate scales.

For the building up of systems of effective bargaining of the first class, two influences are at work. The first is the formation of homogeneous, even if small, employers' associations, in which the setting of a national wage scale is possible. Of the new systems of collective bargaining of the first class established within the past fifteen years, it is to be noted that the Potters deal with two separate groups of employers. The Machine Employing Coopers and the Wall Paper Manufacturers are small and homogeneous organizations. It is entirely possible, of course, for several such bargaining groups in a trade to be united for certain purposes in a single employers' association. The three groups of manufacturers in the glass bottle trade, for instance, are parts of the National Association of Glass Bottle Manufacturers. The second influence making for the establishment of systems of collective bargaining of the first class is the tendency on the part of a considerable number of unions to make their wage rates uniform. Within very recent years, for instance, the railway brotherhoods have been striving to make sectionally uniform their rates, which have hitherto varied considerably from railroad to railroad.[1] Whatever disadvantages may be connected with this process, it may be confidently predicted that if it is carried to

as in newspaper publishing. There appears to be no insuperable difficulty in the way of the Publishers' setting in annual conferences with the unions in the printing trades national rates of wages, differentiated according to the size of the place and according to section of country, but pivoting on a central rate. The advantage to the Publishers and to the unions would be that under such a system the working rules would probably come under joint determination.

[1] For an account of this movement, see an article in the October number of this Journal by Mr. William J. Cunningham, entitled "Standardizing the Wages of Railroad Trainmen."

successful conclusion one effect will be that working rules which have heretofore been determined practically by the national unions will tend to become more and more subject to joint determination.

The successful working of systems of collective bargaining of the second class is entirely practicable where an employers' association is willing to allow the national union to determine independently national working rules. The American Newspaper Publishers' Association, as has been noted above, has adopted this policy. The newspaper publishing business is one in which the suspension of work is extremely hurtful. It is also an industry in which the unions are very strong. The Publishers, under their arbitration agreements with the unions, receive a guarantee that disputes will not result in strikes. Wages and hours are settled by joint conferences or, if these fail, by arbitration. But the Publishers have expressly agreed that national working rules shall not be arbitrated. It is possible that other groups of employers are so concerned in avoiding the suspension of work that they may be willing to waive the joint determination of working rules. But a complete system of collective bargaining, including the joint determination of all working rules, appears feasible only where a national or district conference sets a national or district wage rate.

GEORGE E. BARNETT.

JOHNS HOPKINS UNIVERSITY.

THE POWDER TRUST, 1872–1912

SUMMARY

Introduction, 444. — Period I. Organization of the first combination in the explosives trade, 445. — The Council, 446. — Compacts with the California Powder Works, 447. — Amendment of the Articles of Association, 448. — The Agreement of 1886, 450. — Fundamental Agreement of 1889, 452. — Period II. Competition between 1890 and 1894, 454. — Revision of the Fundamental Agreement, 456. — The "Understanding" of 1896, 456. — Advance in the prices of powder subsequent to 1896, 457. — Contests against new competitors, 459. — Miscellaneous agreements looking to more complete control, 460. — Early combination in the Dynamite Trade, 462. — Acquisitions of the Eastern Dynamite Company, 465. — Origin of the European Agreement, 465. — Its terms, 466. — The Mexican Agreement, 467. — Period III. The organization of E. I. du Pont de Nemours and Company, Delaware Corporation of 1902, 470. — Relation of E. I. du Pont de Nemours and Company and Laflin and Rand to subsidiaries, 471. — Option upon Laflin and Rand, 472. — The Delaware Securities Company, 472. — The Delaware Investment Company, 473. — Relations of the Companies outside of the combination, 474. — E. I. du Pont de Nemours and Company of Pennsylvania, 475. — The California Investment Company, 476. — International Smokeless Powder and Chemical Company, 477. — Percentage of control exercised, 478. — Prices, 478. — Dissolution of subsidiaries, 479. — Decision of the Circuit Court, 480.

AMONG the numerous combinations in restraint of trade that have been attacked in recent years by the government under the Sherman Act, the so-called "Powder Trust" is probably the most interesting; and this for several reasons. In the first place the Powder Trust has had perhaps the longest continuous existence of any combination, the Standard Oil Company alone excepted. Secondly, the combination has demonstrated that, contrary to the general experience, it is possible for a pool to maintain itself through a long period of years without either breaking

down or to any great extent losing its effectiveness. Finally, peculiar interest attaches to the Powder Trust in its later history because of the unique scheme employed by E. I. du Pont de Nemours and Company, to be considered in the latter part of this article, for dissolving subsidiaries.

The history of the Powder Trust falls naturally into three periods, as follows: —

I. From April 23, 1872, to July 2, 1890, the date of the passage of the Sherman Act.

II. From July 2, 1890, to March, 1902, when Thomas, Pierre, and Alfred du Pont incorporated the E. I. du Pont de Nemours and Company, the Delaware corporation of 1902.

III. From the incorporation of March, 1902, to the present day.

Period I

At 10 o'clock on April 23, 1872, certain persons representing six gunpowder manufacturers[1] held a meeting in New York City at the office of F. L. Kneeland, 70 Wall Street. A seventh concern, tho not represented, expressed in a letter its entire agreement with the purposes and objects of the assemblage.[2] The secretary of the meeting, Mr. A. E. Douglass, representing the Hazard Powder Company, read a proposed scheme of association, which was amended in some respects to conform to the opinions

[1] The concerns represented were as follows: E. I. du Pont de Nemours and Co., the Laflin and Rand Powder Co., the Oriental Powder Mills, the American Powder Co., Miami Powder Co., and the Hazard Powder Co. All citations are from the Testimony, Exhibits, Briefs, and documents in the suit of the United States of America *v.* E. I. du Pont de Nemours and Co. et. al. U. S. C. C., for the District of Delaware, No. 280. In Equity.

[2] This seventh concern was the Austin Powder Company, a corporation of Ohio.

of those present and was then ordered to be printed and distributed for further consideration and action to the participating firms and companies. It was resolved that a committee of four should be appointed by the chairman who should arrange a price schedule for the prominent markets of the United States and report at the next meeting. [1]

On April 29th, at an adjourned meeting, the committee of four reported back a price schedule which was unanimously adopted as were also, substantially unchanged, the articles drafted at the prior session. The name of the pool was to be the "Gunpowder Trade Association of the United States." Its declared purpose was to ensure "an equitable adjustment of prices and terms for sales of powder throughout the United States." [2] Tho seven concerns composed its original membership, it was provided that any manufacturer might signify in writing to the President his desire to become a member and might be admitted to the combination. Representation was based largely upon the size of the concern. E. I. du Pont de Nemours and Company, and the Hazard and the Laflin and Rand Powder Companies were allotted ten votes each. The Oriental Powder Mills received six votes and each of the other concerns four votes. The Association was to fix and regulate the minimum prices for powder, for which purpose, presumably, it was provided that the association should meet quarterly.

A "Council" of five persons was to be elected by the associates. It was to meet weekly or at the call of the chairman, and three members were to constitute

[1] Confidential Minutes of the Meeting of the Manufacturers of Gunpowder, April 23, 1872. Gov't Exhibit No. 96, Pet. Rec. Exhibits, vol. i, pp. 471–472.

[2] Articles of Association, Gov't Exhibit No. 96-b, Pet. Rec. Exhibits, vol. i, pp. 476–477.

a quorum. To it all questions of price discrepancies and discriminations were to be referred, as well as all complaints of infractions of the agreement. The "Council" was to give a final adjudication upon these questions, by a majority vote, subject to the right of an aggrieved member to appeal to the next quarterly meeting of the association.[1] The object of the Council, as alleged by the government in its Brief was solely to secure the maintenance of the price schedules established by the Association.[2]

At the time of the formation of the Association there was in existence and doing business, in the western part of the United States, a company known as the California Powder Works. In 1875 the combination began a campaign of under-selling for the purpose of eliminating that concern from the field. The outcome of the contest was the sale by the California Powder Works of 43¼ per cent of its stock to E. I. du Pont de Nemours and Company.[3] In the same year an agreement was entered into between the Association and the western concern. Rules were adopted by which the prices of powder in the states and territories of Utah, Wyoming, Montana, Colorado, and New Mexico (territory known as the "Neutral Belt") were to be named by the "Representative Agents" of the Association, but not to be less than certain minimum prices fixed by that Association. Members engaged not to sell below prices and terms thus established, upon penalty of one dollar per keg for such sales, payable in gold.[4] In 1880 this agreement was renewed for a term of five years. The latter compact provided that the Association should neither

[1] Op. cit., Articles of Association, p. 478.

[2] Brief for the United States, vol. 2, p. 8.

[3] Cf. Amended Pet., Pleadings, pp. 18–19.

[4] Gov't Exhibit No. 96–t Pet. Rec. Exhibits, vol. i, pp. 521 ff.

sell in nor ship into the states of California, Oregon, and Nevada and the territories of Arizona, Idaho, Washington, and Alaska, British possessions or colonies west of the Rockies.[1] The Neutral Belt was preserved subject to the same kind of an agreement in regard to prices as was utilized in the arrangement of 1875. The California Powder Works upon its part agreed to refrain from any shipments into the territory east of the Neutral Belt, which was to belong exclusively to the Association.[2]

In May, 1876, an agreement was secured from the Sycamore Powder Company to maintain the rate schedules of the Association.[3] Presumably this was not a difficult task, for as early as 1873 the du Pont interests had purchased 500 shares in this concern.[4] About the same time another agreement was made, this time with the Lake Superior Powder Company, whereby that concern agreed to confine its sales to a certain definite territory. The Association had earlier agreed that such of its members as were not at that time in enjoyment of the Lake Superior trade would not attempt to enter that district.[5]

Prior to this, in 1876, the articles of association were so amended that, in case of an infraction of

[1] Except that du Pont de Nemours, the Hazard, and Laflin and Rand Companies were given rights to make shipments up to certain amounts. Gov't Exhibit No. 4, Pet. Rec. Exhibits, vol. i, p. 45.

[2] Ibid., Agreement, pp. 49 ff.

[3] Gov't Exhibit No. 96–a, Pet. Rec. Exhibits, vol. i, p. 534.

[4] Testimony of E. C. Lewis, Def. Rec. Testimony, vol. i, pp. 403–409. The remainder of the stock was purchased by the same parties a few years later.

[5] Compendium of Rules, June 1, 1881. Gov't Exhibit No. 97, Pet. Rec. Exhibits, vol. ii, Secs. 37–38, p. 834. About 1877 or 1878 a majority of the stock of the Lake Superior Powder Company was acquired for cash by the du Ponts and other interests. Cf. Testimony of J. G. Reynolds, Def. Rec. vol. ii, pp. 589–590. Amended Pet. of Gov't asserts that both of these concerns were forced into the agreements by ruinous competition. Cf. Amended Pet. Pleadings, p. 23. Assertions are rebutted in defendant's testimony. Def. Rec. Testimony of E. C. Lewis, vol. i, pp. 412–413; testimony of J. G. Reynolds, ibid., vol. ii, p. 590.

prices, charges thereof should be preferred by a written notice twenty days previous to the quarterly meeting. The notice was required to state definitely the place at which the goods in which the cut was claimed to have been made were sold and delivered. At the quarterly meeting the associates, each having one vote, would hear the evidence and determine its value. Their decision was to be final and the penalty was to be paid in cash to the Association. This, of course, eliminated the necessity of the council of five members, originally provided for in the agreement of 1872, and that paragraph was in consequence repealed on August 2, 1876.[1] The various "triers" appointed under the new provision, to secure the maintenance of prices soon found plenty of work for them to perform. In the first place three new independent companies entered the gunpowder trade between 1878 and 1881 in competition with the Association. The result was a decided and general demoralization of prices and the conditions of the trade.[2] These circumstances subjected the Association to the most severe test of its career. Between 1881 and 1883 the minutes show that 230 cases of violations of price agreements were tried by the Association.[3] There is evidence to prove that it was a practical impossibility to maintain the schedule of prices, and that each member looked out for his own interest.

There is also abundant testimony to show that a part of this demoralization in prices was caused by a campaign of under-selling inaugurated against the above mentioned independent companies in the period

[1] Amended Articles of Ass'n, Gov't Exhibit No. 26-ee. Pet. Rec. vol. i, pp. 558–561. For repeal of the section regarding the Council see Gov't Exhibit No. 26-bb. Pet. Rec. Exhibits, vol. i, pp. 546–547.

[2] Cf. Ans. of the King Powder Co., Pleadings, p. 410. Also Testimony of Gershon M. Peters, Def. Rec. Testimony, vol. ii, pp. 689–692.

[3] Cf. Brief, vol. 2, p. 14.

1880–85. For example, in the case of the King's Great Western Powder Company, the Hazard Powder Company gave instructions to its agents to cut the price with the guarantee to each customer that it should be ten cents lower than any price that the King's Company would make them. Prices on rifle powder in Cincinnati, where the King's Company was located, went down to $2.25 per keg, altho in the New England and other states it was $6.25. Blasting powder declined in price from $2.75 or $2.85 to 80 cents per keg in the same locality.[1] Substantially the same methods were employed against both the Ohio Powder Company and the Marcellus Powder Company,[2] the other two of the independents, with the result that all three were forced to yield to the combination,[3] and became parties to a new combination on August 23, 1886, together with the concerns already in the Association.

The purpose of the agreement of 1886 was: "regulating in a convenient and desirable manner the business of the parties . . . including the regulation of the prices at which such powder shall be sold; for the purpose of avoiding unnecessary loss in the sale and disposition of such powder by ill regulated or unauthorized competition and under-bidding by the agents of the parties hereto". . . . The terms of the agreement provided that the nine parties to the

[1] Testimony of R. S. Waddell, Brief for the United States, vol. 2, pp. 16–20. It is only fair to say that it was endeavored to rebut the testimony of Waddell in regard to the methods of competition employed against these independent companies, and to so far as possible, discredit it. Cf. Testimony of Gershon M. Peters, Def. Rec. Testimony, vol. ii, pp. 690–691, 699, 729–731.

[2] Cf. Amended Pet. in Pleadings, pp. 28–29. Testimony R. S. Waddell, Brief vol. ii, pp. 22–23.

[3] In 1886, the stock of the Marcellus Company was sold to du Pont de Nemours, the Hazard, and Laflin and Rand Companies and the Oriental Powder Mills. In the same year the Ohio Powder Company disposed of 38 per cent of its stock to the first three of these companies, Cf. Amended Pet. Pleadings, p. 32.

combination, known as the "Nine Companies,"[1] outside of the Laflin and Rand, Hazard, and du Pont de Nemours Companies, known as the "Three Companies," should be allotted arbitrary quotas of so many thousand kegs of powder per year. Whenever the "Three Companies" should show an increase in average yearly sales of powder, it was provided that the total allottments to the "Nine Companies" should be correspondingly increased.[2] In case the "Nine Companies" sold more than their total allottment, they agreed to take from the "Three Companies" sufficient powder to adjust the liability at a price of three-quarters of the established sales prices, in the case of sporting, and five-sixths in the case of blasting powder.[3] Thus the "Three Companies" were left free to sell as much powder as they could, it being merely provided that when their sales should increase beyond the average for the years 1882, 1883, and 1884 the total allottment of the "Nine Companies" should be increased. On the other hand, if the "Nine Companies" sold more than their allottment, including such increases in percentages as might accrue to them through increases in sales by the "Three Companies" during the year, they were obliged to adjust this by purchase from the said "Three Companies."

The agreement established a "Board of Arbitration" consisting of a chairman and two other members who were to be designated by the Association. The Board was to settle all the questions in dispute and their decisions thereon were to be final.[4] The Schagti-

[1] Oriental Powder Mills, Miami Powder Company, American Powder Mills, Austin Powder Co., King's Great Western Powder Co., Lake Superior Powder Co., Sycamore Powder Mfg. Co., Ohio Powder Co., and Marcellus Powder Co.

[2] Cf. Agreement. Gov't Exhibit No. 7, Pet. Rec. Exhibits, vol. i, p. 114.

[3] Ibid., pp. 117–119.

[4] Ibid., pp. 119–120.

coke Powder Company, a majority of whose stock was held by Laflin and Rand, was to be regarded in the matter of sales as a part of the latter company. Laflin and Rand on their part guaranteed that the Schagticoke Company would comply with all the provisions of the agreement.[1] Within six months of the formation of this new combination agreement the prices that had so declined during the early eighties had recovered to practically their former figures.[2] The trade of the California Powder Works was, as before, regulated by a supplementary agreement.[3] Four other supplementary agreements were also entered into in the two next succeeding years, at New Orleans, Chattanooga, Louisville, and Cincinnati respectively, looking to the strict enforcement of the regulations and prices of the Association.[4]

As provided by its own terms the agreement of 1886 lapsed or was to lapse on December 31, 1889. But before that date the same twelve companies, parties to the 1886 agreement, entered into the so-called "Fundamental Agreement" of 1889. The objects of the third compact as stated were identical with those of the second one. In operation also the new

[1] Ibid., p. 121.

[2] Testimony of Gershon M. Peters. Def. Rec. Testimony, vol. ii, pp. 697–698. Cf. Testimony of R. S. Waddell, Brief, vol. 2, pp. 28–29.

[3] The agreements were slightly altered. Certain of the members of the combination were allowed to ship into Pacific Coast Territory a limited amount of certain high grade goods. But none were allowed to ship in goods of the lower grade. Such sales, however, as were made in this territory were to be at prices named by the California concern and were also to be in accordance with its rules. In return the California Powder Works was permitted to make sales, with certain exceptions, east of the "neutral belt," territory formerly exclusively reserved to the combination. An interesting feature of these agreements is the designation of the parties thereto not by their names, but by certain letters of the alphabet. Cf. Abstracts referring to Pac. Coast Sales. Gov't Exhibits Nos. 114 and 115, Pet. Rec. Exhibits, vol. ii, pp. 996–1001.

[4] The text of the agreements at New Orleans, Louisville, and Cincinnati may be found in Pet. Rec. Exhibits, Nos. 8–10, vol. i, pp. 123–132. Reference is made to the Chattanooga Agreement in a letter of the Hazard Powder Company to its agent at Chattanooga. Gov't Exhibit No. 46, ibid., p. 254.

pool adopted in general the same methods previously in vogue under that agreement. The United States was divided into seven districts and, as before, trade on the Pacific Coast was to be regulated by a supplementary arrangement with the California Powder Works.[1] A "Board of Trade" of five members succeeded the "Board of Arbitration" of the preceding agreement, with power to fix and alter prices and to adjudicate grievances. The total volume of sales was to be regarded as the aggregate trade for the year and was to be divided in direct proportion to the yearly allottment of each one of the parties.[2] The Board of Trade was directed to make computations of sales in excess of or deficiencies below the allottments thus provided for and to furnish each party with a written accounting in full detail. Within thirty days parties liable were required to pay cash into the treasury for excesses. This money was then to be distributed among the parties entitled thereto as shown by the accounting.[3]

One paragraph of the Fundamental Agreement provided that any one who was injured by an overt act of the Board of Trade, "as for instance the reduction of a price at a place, in treatment of a local disturbance of trade," should be compensated for the loss sustained by the payment of money.[4] The new agreement embraced companies that controlled ninety-five per cent of the output of rifle powder and ninety per cent of the output of the blasting powder of the United

[1] Fundamental Agreement, Gov't Exhibit No. 6, Pet. Rec. Exhibits, vol. i, pp. 94–109. Cf. pp. 100–101.

[2] Hazard, Laflin and Rand, and du Pont de Nemours Companies to be regarded as one party.

[3] Fundamental Agreement, Gov't Exhibit No. 6, Pet. Rec. Exhibits, vol. i, pp. 101–102.

[4] Op. cit. Fundamental Agreement, p. 107.

States.[1] The agreement was to go into effect in January, 1890, and was to continue in force to June 30, 1895, and indefinitely from year to year thereafter, unless one or more of the parties should give notice of intent to withdraw from it.[2] As a supplement to the Fundamental Agreement an "Auxiliary Agreement" was entered into on the 19th of December, 1889. This made specific provision for the work of the Board of Trade, and laid down numerous rules in regard to deliveries, agents, magazines, etc.[3]

With the conclusion of the Fundamental Agreement of 1889, the first period of the history of the powder combination closes. It may be styled the period of inception. In it both the gunpowder trade and the dynamite trade went through the first stage of combination. The gunpowder trade in this period has been combined effectively; but the dynamite trade (as will appear presently) was not fully organized until later. The full consolidation of the dynamite trade belongs in the second period, as well as does the story of the establishment of closer and more harmonious relations among the members of the combination.

Period II

The passage of the Sherman Act in 1890 was apparently unknown to the members of the combination. This was perhaps not unnatural, since at that time, or at least shortly after, the associates had much more vital matters to attend to. These related chiefly to the suppression of competition. Between 1890 and 1894, three new concerns entered the field of

[1] Testimony of R. S. Waddell, Brief, vol. 2, p. 37.

[2] Op. cit. Fundamental Agreement, p. 108.

[3] Auxiliary Agreement, Gov't Exhibit No. 100, Pet. Rec. Exhibits, vol. ii, pp. 906–911.

powder manufacture, *i. e.*, Chattanooga Powder Company in 1890, Phoenix Powder Manufacturing Company in 1891, and the Southern Powder Company in 1894.[1] The Chattanooga Company had scarcely begun business before war against it was commenced by the combination. Mr. F. J. Waddell was instructed by Eugene du Pont "to put the Chattanooga Powder Company out of business by selling at lower prices."[2] Acting under these orders that gentleman went into southern territory where he sold powder at cost, or below in some cases. By paying the railroad agent at Ooltewah, Tennessee, from $15 to $18 per month, Waddell was furnished with a weekly statement of the powder shipments made by the Chattanooga Company together with the name of the consignee, the number of kegs, and the destination;[3] a method of competition that reminds one strongly of the methods of espionage employed by the Standard Oil Company upon various occasions. Finally in the latter part of 1895 the Chattanooga concern sold out.[4] Scarcely less vicious in character was the campaign waged against the Phoenix and the Southern Companies, both of which capitulated to the superior strength of the combination,[5] and passed under its control.[6]

[1] Cf. Amended Petition, Pleadings, pp. 37–39. Besides these concerns the Equitable Powder Company was organized in 1892. At the time of its organization du Pont de Nemours acquired 41 per cent of its capital stock.

[2] Testimony of F. J. Waddell. Brief, vol. 2, p. 60.

[3] Ibid., p. 60 ff.

[4] Laflin and Rand and the du Pont de Nemours Company acquired 55.41 per cent of its stock. Cf. Amended Pet. Pleadings, pp. 40–41.

[5] Cf. Testimony of F. J. Waddell, Brief, vol. 2, pp. 67–75.

[6] Laflin and Rand, du Pont de Nemours, and the Hazard Company acquired all or a very large portion of the stock of the Southern Powder Company and later dismantled its mills. Cf. Amended Pet., Pleadings, p. 40. Laflin and Rand and the Hazard Company together with the American Powder Mills and the Miami and Austin Companies acquired the capital stock of the Phoenix Powder Mfg. Co. Cf. Gov't Exhibit No. 136, Pet. Rec. Exhibits, vol. iii, p. 1694; also answers of various companies in Pleadings, pp. 192, 244, and 426.

About July 1, 1896, the combination held a "round up" as one somewhat facetious witness styled it. To put it in other words, the outsiders were whipped.[1]

Prior to the close of this competitive struggle, on May 8, 1895, the combination at its quarterly meeting appointed a committee to formulate a revision of the Fundamental Agreement. This action was occasioned by the notification of the president of the King Powder Company [2] that the stockholders did not wish to renew their arrangements with the combination.[3] The terms of the Revised Agreement were substantially identical with those of the older Fundamental Agreement, merely eliminating one or two sections including the article in regard to compensation for injuries suffered through overt acts of the Board of Trade [4] and continuing the great majority of the rules embodied in the early document.[5]

In 1896 the acquisition of the new companies, the Chattanooga, Phoenix, and Southern, gave rise to a new agreement known as the "Understanding." [6]

[1] Testimony of F. J. Waddell, Brief, vol. 2, p. 73.

[2] Formerly King's Great Western Powder Company. The name was changed in 1878.

[3] Minutes of Manufacturers Meeting, Gov't Exhibit No. 104, Pet. Rec. Exhibits, vol. ii, p. 953.

[4] Supra, p. 454, note 3.

[5] Revised Agreement, Gov't Exhibit No. 106, Pet. Rec. Exhibits, vol. ii, pp. 958–961.

[6] Fundamental Agreement of 1896, Gov't Exhibit No. 111, Pet. Rec. Exhibits, vol. ii, pp. 973–989. This Agreement is called "the pool agreement" in the Amended Petition. In the Amended Petition an agreement of 1891 is referred to known as the President's Agreement. This provided for a Board of Trade composed of a representative from each of the concerns in the combination. No mention is made of this, however, in the Brief for the United States, which document does show, however, that in 1893 a Board of Trade of only five members was in operation. (Brief for the United States, vol. 2, p. 54.) Therefore, if such a representative board was provided for in 1891, it must have gone out of existence very shortly. Moreover, the index to the Brief gives the heading of President's Agreement referring to vol. ii, p. 53, of that document where the only agreement mentioned is the "Revised Agreement" of 1895. The Amended Petition does not speak of any agreement of 1895. Knowledge of the President's Agreement is specifically denied by the King Powder Company, and Lafiin and Rand in the answers of these defendants to the suit of the United States. Cf. Pleadings, pp. 238–239 and 416.

This document practically continued the Fundamental Agreement of 1889. There was to be but one copy of the Understanding, which was to have no title, and this single copy was to remain in the custody of the Advisory Committee. A syllabus or abstract of the document was, however, to be prepared and given to each member of the combination.[1] Letters of the alphabet were used to designate the various parties to the agreement. A key [2] was also adopted indicating the parties represented by the alphabetical designation. A comparison of the abstract of the Understanding with the Fundamental Agreement reveals but slight differences in the purport of the two documents. Sales in the sixth and seventh districts, *i. e.*, the Pacific Slope District, and the Neutral Belt, were to be regulated by the agreements of 1886,[3] and the Advisory Committee (instead of the Board of Trade) of five members was to regulate prices and other matters as before.[4] Including the Schagticoke Company, the new combination embraced seventeen concerns outside of the California Powder Works.[5]

Almost immediately after the combination of 1896 was formed, prices of powder were advanced by the combination.[6] Between 1896 and 1904, the period during which the agreement of 1896 was operative,[7] rights were given to some of the members of the com-

[1] Minutes, Gov't Exhibit No. 110, Pet. Rec. Exhibits, vol. ii, p. 971.

[2] For a copy of this "Key" cf. Pet. Rec. Exhibits, vol. ii, p. 989–990.

[3] Supra, p. 453, note 2.

[4] Cf. Agreement of 1896, Gov't Exhibit No. 111, Pet. Rec. Exhibits, vol. ii, p. 973–989, or Abstract (of the same), Gov't Exhibit No. 113, ibid., p. 992–996.

[5] To the original twelve companies were added the Chattanooga and Southern Powder Companies, the Phoenix and Equitable Powder Mfg. Companies and the Schagticoke Company. The last two, it will be recalled, were strongly affiliated with the du Pont and Laflin and Rand Companies.

Testimony of Jonathan A. Haskell, Def. Rec. Testimony, vol. ii, p. 1117.

[7] Answer of Laflin and Rand, Pleadings, pp. 247–248.

bination to contract with certain particular customers, at specified prices set by the Association, below the regular schedule prices. The awarding of these contracts was in the hands of the Advisory Committee, under certain regulations adopted by the parties to the combination.[1]

It will be recalled that immediately after the adoption of the Fundamental Agreement of 1889 the prices of powder were raised and that in the early nineties the Association was obliged to meet severe competition on the part of outsiders. Now the rise in prices that followed the agreement of 1896 was accompanied by exactly the same phenomena. Between 1896 and 1902 four new independents were organized outside of the combination; the Birmingham, Indiana, Northwestern, and Fairmount Powder Companies. In the case of the Birmingham Company the combination secured the freight rates out of Birmingham on all the railroads, and set a price on powder of 70 cents per keg, f. o. b. Birmingham, and then added the freight from there to points that ought to be reached so that powder would not net more than 70 cents a keg at Birmingham,[2] and awaited results. As the relator of this method of arrangement laconically remarked: "It was, perhaps, a year until they died."[3]

The Indiana Powder Company was a somewhat different form of company than the ordinary. It was promoted, if that term be allowed, by a George L. Rood, formerly a salesman in the employment of the Hazard Powder Company,[4] who induced several mine owners and operators of West Virginia, Ohio,

[1] Minutes, Gov't Exhibit No. 118-i, Pet. Rec. Exhibits, vol. ii, pp. 1071–1072.

[2] Testimony of F. J. Waddell, Brief, vol. 2, pp. 129–130.

[3] Ibid., p. 130.

[4] Testimony of George L. Rood, Def. Rec. Testimony, vol. i, pp. 420–423.

Kentucky, and Indiana to go in with him and organize the company. The mine owners and operators were in the habit of selling powder to their miners, and, being interested in the new concern, would buy their powder from it. The work of construction upon the mills just outside of Terre Haute had not much more than begun before F. J. Waddell and Mr. Colvin of the Hazard Powder Company appeared upon the scene of action. Their object was to determine if some agreement could not be arrived at between the Hazard Company and the new concern. The proposition offered was that the Indiana Company increase their capital stock and sell the Hazard Company 51 per cent of it at par.[1] The offer was, however, refused; Rood completed his works and began to get out his powder.

In the meantime Eugene du Pont and Mr. F. W. Olin (the latter of the Equitable) had been appointed a committee to attend to the Indiana's competition. The Great Northern Supply Company was organized by the combination and began business in the vicinity of Terre Haute, as near as possible to the mines of the coal operators who were stockholders in the Indiana Powder Company. The Supply Company put out a line of wagons retailing powder at $1.25 per keg, while the price agreed upon by the miners and operators was $1.75 per keg. The Great Northern Supply Company obtained its powder from the overlying companies, chiefly from Laflin and Rand, the Hazard, du Pont de Nemours, and American.[2] The contest lasted from about 1899 to the latter part of 1901 or

[1] Testimony of F. J. Waddell, Brief, vol. 2, p. 137 and of George L. Rood, Def. Rec. Testimony, vol. i, pp. 425–427.

[2] Testimony of H. M. Barksdale, Def. Rec. Testimony, vol. ii, pp. 663–666 and F. J. Waddell, Brief, vol. 2, pp. 138–140; George L. Rood, Def. Rec. Testimony, vol. i, pp. 428–429.

early 1902. Rood finally made a proposition to the combination and it was accepted. A majority of the Indiana's stock was sold out to Laflin and Rand and E. I. du Pont de Nemours and Company at a rate of five in cash to one in stock. Rood at the same time agreed not to embark in the powder business for a period of twenty years.[1]

The North Western Powder Company had been subjected to the same competition as the Indiana through the fact that it was located only about thirty-five miles from the Indiana Company's plant,[2] and was operating in practically the same manner as the latter concern.[3] Rood also arranged for the sale of the stock of this concern to certain members of the combination,[4] at about the same time as he disposed of the Indiana Powder Company. The fourth company of those entering upon the manufacture of powder between 1896 and 1902, the Fairmount Company, was a small concern in West Virginia and sold out very quickly.[5] As to the Great Northern Supply Company, that concern was liquidated and made an assignment for the benefit of its creditors, the principal ones being E. I. du Pont de Nemours and Company, and Laflin and Rand.[6]

The control and power of the powder combination was further strengthened between 1896 and 1902 by a series of agreements entered into with various individuals and concerns. An agreement with A. S. Speece and Company provided that in consideration

[1] Testimony of George L. Rood, Def. Rec. Testimony, vol. i, pp. 430–431, 439.

[2] Op. cit. Def. Rec. Testimony, vol. i, p. 431.

[3] Brief, vol. ii, p. 152.

[4] Ibid., note 1, above.

[5] A majority of the stock of the Fairmount Company was purchased by the du Pont interests. Cf. Answer of the Fairmount Powder Company, Pleadings, p. 326.

[6] Testimony of H. M. Barksdale, Def. Rec. Testimony, vol. ii, p. 666.

of $800 per annum they and their representative, D. M. Kirk, would engage to keep out of the powder business. An agreement of like nature was concluded on May 15, 1896, with F. L. Kellogg. Some sort of a compact was also entered into between the Belmont Powder Works, party of the first part, and E. I. du Pont de Nemours and Laflin and Rand, party of the second part; while A. S. Kirk and Company had agreements, the precise character of which is not revealed by the documents.[1] Further, on January 29, 1901, a contract was made whereby the King Powder Company agreed to sell its entire output of powder, except such as might be required by the Peters Cartridge Company with which it was intimately associated, to E. I. du Pont de Nemours and Company, and Laflin and Rand for a period of twenty-five years from the first day of April, 1901.[2] With the purchase of the majority or entire control of the four powder companies that had entered the field between 1896 and 1902, the Birmingham, Indiana, Fairmount, and Northwestern, and the completion of the agreements just mentioned, competition in the manufacture of blasting and sporting powders seems to have been nearly eliminated throughout the United States except in the state of Pennsylvania.[3]

It now becomes necessary to go back somewhat in order to examine the process by which the Powder Trust secured control of the dynamite trade. Dynamite, a high explosive, was first manufactured on the

[1] Brief, vol. 2, pp. 155–158.

[2] Testimony of Gershon M. Peters, Def. Rec. Testimony, vol. ii, pp. 708–710. Cf. also Gov't Exhibit No. 333, Pet. Rec. Exhibits, vol. v, pp. 2393–2398.

[3] This is the allegation of the Government in its Brief where it is stated that the same is admitted by the anwer of E. I. du Pont de Nemours in the Pleadings, Cf. Brief, vol. 2, p. 161 and Pleadings, pp. 148–151. The writer feels that the admission in the terms in which it is couched is so qualified as to preclude its being regarded as an absolute affirmation of the charge.

Pacific Coast about the year 1869. It was used to a considerable extent in the western states as a substitute for blasting powder before it made much progress in the East.[1] Before long, however, it became evident that dynamite was a strong competitor of blasting powder. It became not merely desirable but absolutely necessary that the powder combination should control it, blasting powder being one of its principal articles of manufacture.

About 1879 or 1880 the Repauno Chemical Company had been formed by the du Pont and Laflin and Rand interests for the purpose of manufacturing dynamite. At that time there were in the United States several concerns engaged in the manufacture of that explosive. On the Pacific Coast were the California Powder Works and the Giant Powder Company; in the East were the Aetna Powder Company and the Lake Supperior Powder Company, while a branch of the California Powder Works was also operating in that section. A branch of the Giant Powder Company, known as the Atlantic Dynamite Company, was doing business in the state of New Jersey. At the time of the organization of the Repauno Chemical Company another concern, the Hercules Powder Company, was also organized by the same interests, for the purpose of acquiring the eastern plant of the California Powder Works. Coincidently the same parties also purchased one-third of the stock of the Giant Powder Company's subsidiary, the Atlantic Dynamite Company.[2]

Up to 1895 the stockholders of the three last mentioned concerns remained practically the same, that is to say, the du Pont and Laflin and Rand interests controlled both the Hercules Powder Company and the

[1] Brief, vol. 2, p. 166.

[2] Testimony of H. M. Barksdale, Def. Rec. Testimony, vol. ii, pp. 598–601.

Repauno Chemical Company, holding at the same time a one-third interest in the Atlantic Dynamite Company. It so happened that the business of the Atlantic Company in the East was conducted by two agents, between whom, from time to time, a considerable amount of friction arose. At length the California owners found themselves in a position where they must dismiss one of these men and continue the other, or else secure some one else to manage their business for them in the East.[1] The upshot of this situation was the organization of the Eastern Dynamite Company under New Jersey laws with an authorized capital stock of $2,000,000. Of this $1,400,000[2] was issued in exchange for the capital stocks of the Repauno Chemical Company and Hercules Powder Company. The remaining $600,000[3] was exchanged for the assets of the Atlantic Dynamite Company. Now as du Pont de Nemours and Company and Laflin and Rand had owned together nine-twelfths of the stocks of the Repauno and Hercules Companies, they received nine-twelfths of the stock of the Eastern Dynamite Company in exchange therefor, or nine-twelfths of $1,400,000, which gave them $1,050,000 of stock out of a total capitalization of $2,000,000 and therefore control.[4] After the transfer of the property of the Atlantic Dynamite Company to the Eastern Dynamite Company the directors of the latter concern caused to be incorporated in New Jersey the Atlantic Dyna-

[1] Op. cit. Def. Rec. Testimony, vol. ii, p. 617.

[2] Resolutions of Directors of the Eastern Dynamite Company. Gov't Exhibit No. 150, Pet. Rec. Exhibits, vol. iv, p. 1761–1762.

[3] Ibid., Exhibit No. 149, p. 1760.

[4] Laflin and Rand and the du Pont Company received also $200,000 additional stock as their share of the Atlantic Dynamite deal. The holdings of both, including that of the du Pont's through the Hazard, which they owned outright, were in the year 1902, $1,206,000.

mite Company and caused the Eastern Dynamite Company to subscribe for the entire issue of its stock amounting to 5500 shares.[1] This process left the Eastern Dynamite Company a mere holding corporation.

As a whole the dynamite trade was combined and consolidated with great rapidity. In 1895 the Eastern Dynamite Company entered into an agreement with the Aetna Powder Company known as the "Memorandum of Understanding," the object of which was to secure the apportionment of the dynamite trade between those two companies and the companies controlled by them. The two parties to the combination were to divide business between themselves upon a basis of the proportion of total trade enjoyed by each for the year ending June 30, 1895. If the Aetna over-sold its quota it was to pay Jonathan A. Haskell, representing the Eastern Dynamite Company, a penalty of two cents per pound on such over-sales. On the other hand, if the Aetna had not sold its proportion of the total trade it was to be reimbursed at the rate of two cents per pound by Haskell. A "Standing Committee" of five members with the same function as the Board of Trade of the powder combination was established. This committee was to meet monthly on, or as near as possible to, the date of meeting of the Board of Trade of the Gunpowder Association. Neither party of the two parties to the agreement was to interfere with the business of the other. If one took trade from the other by reducing prices, he was heavily penalized upon a demonstration of that fact. Trade diverted to an outside competitor was to be considered as belonging to an associate for at least six months and for three more if requested.

[1] Brief, vol. 2, p. 107.

If either company purchased any other high explosive company, it was entitled thereby, the other party not participating in the transaction, to sell a proportionally larger percentage of the total trade.[1] The advantage of this last arrangement was clearly with the Eastern Dynamite Company. Between the middle of 1896 and the middle of 1899 that holding company acquired the New York Powder Company, the United States Dynamite Company, Clinton Dynamite Company, Mt. Wolf Dynamite Company, American Forcite Powder Manufacturing Company, and several other concerns.[2]

At one time in its history the American Tobacco Company started to invade the territory across the water. In the case of the powder trust the reverse occurred. In 1897 foreign manufacturers of gunpowder, detonators, and high explosives began the erection of factories at Jamesburg, New Jersey. Representatives of the American combination, therefore, shortly crossed the water and opened negotiations with the foreign manufacturers who had begun the invasion. The result was that a satisfactory agreement was arrived at which has been known under various titles as the Jamesburg Agreement, the London Agreement, the International Agreement, and the European Agreement.[3] This agreement is so typical an example of full-fledged international combination that its

[1] Memorandum of Understanding, Gov't Exhibit No. 236, Pet. Rec. Exhibits, voll iv, 1991–1995. A supplementary agreement was entered into explanatory of this origina. "Memorandum of Understanding," showing, among other things, the exact percentages allotted to each party. Cf. Supplementary Explanation of Original Agreement. Gov't Exhibit No. 247, Pet. Rec. Exhibits, vol. iv, pp. 2016–2019.

[2] A list of these companies is given in the supplementary explanation of the original agreement between the Aetna and Eastern Companies. Gov't Exhibit No. 247, Pet. Rec. Exhibits, vol. iv, pp. 2016–2019.

[3] Brief, vol. 2, pp. 174–175. It is to be noted that the Judson Dynamite and Powder Company, and the Giant Powder Company Consolidated had not been before parties to the agreements of the Powder Combination but were brought into it in the European agreement.

principal provisions deserve detailed statement. They were: —

1. In regard to detonators the "European Factories"[1] agreed to abstain from erecting works in the United States, and to abandon the project begun at Jamesburg. The expenses so far incurred in the construction of this plant were to be shouldered by the "American Factories"[2] which also agreed to take of the "European Factories" five million detonators per year.[3]

2. As to black powder both parties bound themselves to erect no factories, the Americans in Europe, the Europeans in the United States. Each, however, was free to ship into the territory of the other.[4]

3. The arrangements in regard to smokeless sporting powder were the same as in regard to black powder.[5]

4. Smokeless military powder factories were not to be erected by the Americans in Europe or the Europeans in America. It was agreed that European factories upon receipt of an inquiry from the Government of the United States in regard to explosives, should first ascertain the price quoted or fixed by the American factories and were then bound to neither quote nor sell below that figure. Reciprocally the American factories on receiving an inquiry from governments other than their own, should, in like manner, obtain the price the European factories were quoting or had fixed and were bound not to quote or sell below it.[6]

5. For the sale of high explosives the world was divided into four districts. All of the United States, its territories and possessions, present and future, Mexico, Guatemala, Honduras, Nicaragua, and Costa Rica, Columbia, and Venezuela were to be exclusively American territory. All other countries in South America and the islands of the Caribbean Sea, not Spanish possessions, were to be common territory and designated as "syndicated territory." The Dominion of Canada and the Spanish possessions in the Caribbean were to be a free market unaffected by the terms of the agreement. The rest of the world was to be exclusively the territory of the European factories.

[1] These companies were Vereinigte Koln Rottweiler Pulver Fabriken of Cologne and the Nobel-Dynamite Trust Company (Ltd.) of London.

[2] Du Pont de Nemours and Company, Laflin and Rand, Eastern Dynamite, Miami Powder Co., American Powder Mills, Aetna and Austin Powder Cos., Cal. Powder Works, Giant Powder Co., Consolidated, Judson Dynamite & Powder Co.

[3] European Agreement, Gov't Exhibit No. 119, Pet. Rec. Exhibits, vol. ii, pp. 1124–1125.

[4] Ibid., p. 1125.

[5] Ibid., p. 1125.

[6] Ibid., pp. 1125–1126.

6. A chairman and vice-chairman were to be appointed by each party to the agreement. The chairmen or in their absence the vice-chairmen were to establish the rules for the accomplishment of the terms of the syndicate arrangement. (*a*) They were to agree, from time to time, upon a basis price for each market in syndicated territory, said basis to include the cost of manufacturing, freight, insurance, etc. (*b*) They were also to establish a selling price for each market to be regarded as a convention price below which no sales were to be effected. The difference between the selling and the basis prices was to be syndicate profit to be divided equally.[1]

7. A common syndicate fund of $50,000 was to be established by a payment of $1.00 per case upon certain grades of explosives shipped into syndicated territory. When the sum of these assessments reached that figure the payments were to be reduced to 50 cents per case and from the fund thus established fines not recoverable from the parties were to be deducted. It was permitted that the chairman should utilize two-thirds of this common fund for the purpose of protecting the common interest against outside competition.[2]

8. Chairmen were to adjudicate all breaches of the agreement. On failure to agree they were to appoint an umpire, who was to be a European or an American according as the complaint was brought by the American or European factories.[3]

9. Fines: (*a*) for trading in the territory of the other, the penalty was the invoice value of the goods; (*b*) for cutting prices in syndicated territory, no limit was placed upon the amount of the fine; (*c*) for erecting a factory in the exclusive territory of the other, the penalty should not be less than £10,000.[4]

10. The agreement was to go into effect on July 15, 1897, for a period of ten years. In the absence of six months' notice it was to continue thereafter from year to year.[5]

The "European Agreement" was very shortly followed by the "Mexican Agreement." On October 1, 1898, the California Powder Works, the Judson Dynamite and Powder Company, and the Giant Powder Company, Consolidated, known as the "Western Companies," entered into a compact with the Eastern Dynamite Company and the Aetna Powder

[1] Ibid., pp. 1127–1128.
[2] Ibid., p. 1128.
[3] Ibid., pp. 1128–1129, 1130–1131.
[4] Ibid., p. 1129.
[5] Ibid., p. 1130.

Company, known as the "Eastern Companies," in regard to the Mexican trade.[1] A price schedule was prepared by the parties with which they agreed to comply during its continuance.[2] A "Board of Representatives" of two members was established for the Mexican business, one member to be appointed by the Eastern and one by the Western companies. These were given power to investigate complaints and impose penalties. If unable to adjust the matter satisfactorily, the representatives were to appoint two disinterested parties as arbitrators who should in turn appoint a third, if a decision was necessary, to constitute a Board of Arbitrators. Their decision was to be final.[3] The agreement was to continue in force until December 31, 1899, and from year to year thereafter except upon notice of three months.[4] As a matter of actual fact, parties continued to carry out the terms of the agreement down to 1905.[5]

The force of the Mexican Agreement was considerably strengthened by the arrangement of October 11, 1898, between the Eastern Dynamite Company and the Hancock Chemical Company, whereby the latter agreed to turn over its entire output — except an amount sufficient to supply the needs of certain specified mining companies, — in consideration of $18,000 a year, for the privilege given of acting as their exclusive sales agent, and a price for their powder of 15 per cent over and above the cost of manufacture and delivery. The agreement was to go into force in November, 1898, for five years, and as usual the "year to year

[1] Mexican Agreement, Gov't Exhibit No. 268, Pet. Rec. Exhibits, vol. iv, p. 2081, ff.

[2] Ibid., pp. 2084–2085.

[3] Ibid., p. 2087.

[4] Ibid., p. 2097.

[5] Brief, vol. 2, p. 192.

thereafter" clause was attached.[1] By a subsequent agreement the Lake Superior Powder Company and the Aetna Powder Company agreed to assume the obligations of this contract, the Eastern Dynamite Company failing performance.[2] A second supplementary agreement between the Eastern Dynamite Company and the Aetna and the Lake Superior Powder Companies provided that the two latter should bear a portion of the expense of the Eastern Dynamite Company's performance of its contract with the Hancock Chemical Company inasmuch as this contract was undertaken for the benefit of all the parties.[3]

The second period then, to summarize, saw the complete consolidation of the dynamite trade of the United States and the practical elimination of competition in that field as well as in the manufacture of gunpowder. The power and monopoly of the combination had been extended by numerous agreements, among which the European and Mexican may be mentioned most prominently.

Period III

In the third period the steadily increasing concentration is further strengthened by the adoption of a corporate form of organization which placed one huge concern at the head of the greater part of the explosives business of the United States.

Prior to the year 1899, E. I. du Pont de Nemours and Company had been a partnership, but in that year it became a corporation under the same name.

[1] Hancock Agreement, Gov't Exhibit No. 265, Pet. Rec. Exhibits, vol. iv, pp. 2074–2078.

[2] Supplementary Hancock Agreement, Gov't Exhibit No. 266, Pet. Rec. Exhibits, vol. iv, pp. 2078–2079.

[3] Second Supplementary Hancock Agreement, Gov't Exhibit No. 267, Pet. Rec. Exhibits, vol. iv, pp. 2079–2080.

In 1902, Eugene du Pont, who had been the active manager of the partnership and later of the corporation, died. None of the other stockholders were willing to assume the management of the corporation and as a result Alfred du Pont requested the coöperation of Pierre S. and Thomas Coleman du Pont, who had not previously been interested in the business. Subsequently there was incorporated in 1902, in Delaware, by Thomas, Pierre, and Alfred du Pont, a corporation known as the E. I. du Pont de Nemours Company (afterwards E. I. du Pont de Nemours and Company) for the purpose of purchasing the 1899 corporation. The company had a capital stock of $20,000,000 and issued $11,997,000, of which the three du Ponts got $8,940,000 as promoters' profits.[1] Purchase money notes were issued to the amount of $12,000,000, which together with the balance of the $11,997,000 stock were exchanged for the properties of the old corporation by the new 1902 Delaware corporation.[2] In order to make this company a purely holding corporation there was organized the E. I. du Pont de Nemours and Company of Pennsylvania and the E. I. du Pont Company.[3] To these two concerns the 1902 Delaware corporation then transferred all its physical properties and assets, retaining merely the securities of these two constituent companies.[4]

Not long after the organization of the Delaware corporation (1902) the du Ponts discovered that the Laflin and Rand Company was interested in sub-

[1] They subscribed in cash $3000, and in return secured the control of the company for when the Government suit was brought in 1907, only a little over $12,000,000 of stock was outstanding.

[2] Brief for the United States, vol. 1, pp. 69–71. Resolutions of Directors, Gov't Exhibit No. 168, Pet. Rec. Exhibits, vol. iv, pp. 1792–1793. Pleadings, Answer of H. A. du Pont, p. 313.

[3] Brief, vol. 1, p. 72.

[4] The capitalisation of these companies was $20,000 and $10,000 respectively.

stantially the greater part of the same concerns as they themselves and also that the combined holdings of the du Pont and Laflin and Rand interests were sufficient to give control to these two concerns of the most of the companies in which they both held stock.[1] The du Pont company, moreover, owned no dynamite plant, altho it was a minority holder in the Eastern Dynamite Company, the Lake Superior Powder Company, and the California Powder Works. On October 1, 1902, the Delaware corporation had minority holdings in fifteen concerns, a majority holding in a sixteenth, a fifty per cent holding in a seventeenth, and owned all the capital stock of the Hazard Powder Company. The latter company in turn had minority holdings in six companies. At the same time the Laflin and Rand interests possessed minority holdings in thirteen companies, fifty per cent holdings in two companies, and majority holdings in two companies.[2] Of all the parties to the powder combination on October 1, 1902, only seven would not be controlled by the 1902 Delaware corporation if it could secure control of Laflin and Rand.[3]

The men at the head of Laflin and Rand at this time were all elderly and the du Ponts had no means of knowing what types of men might step in to take their places.[4] As most of their own stocks were worthless for purposes of control, except in conjunction with Laflin and Rand, the du Ponts finally determined to buy out that concern. Laflin and Rand, however, at first demanded $700 a share for their stock; but as

[1] Testimony of Pierre S. du Pont, Def. Rec. Testimony, vol. i, pp. 489–490.

[2] Ibid., pp. 485–489 and 532–533.

[3] Brief, vol. 2, p. 242.

[4] Ibid., footnote 105, pp. 490–491 and testimony of J. A. Haskell, Def. Rec. Testimony, vol. ii, pp. 1083–1084.

the du Ponts did not feel able to pay so large a sum in cash, matters were finally compromised. The entire capital of the Laflin and Rand Company was 10,000 shares of which certain parties held a majority block of 5,524 shares. Ten of the parties [1] who held the 5,524 shares also held 950 shares of the stock of the Moosic Powder Company. The same ten parties held 3,380 shares of the majority block of the 5,524 shares in the Laflin and Rand Company and they refused to sell the same unless they could also sell their holdings of Moosic stock at a certain price.[2] This demand was finally agreed to and thereupon Thomas Coleman du Pont secured an option upon the said 3,380 shares, the 950[3] shares of Moosic stock and also upon the balance of the 5,524 shares.[4]

As the next step in the process the Delaware Securities Company was organized to purchase and hold certain stock to be purchased from Laflin and Rand.[5] It began business with a paid-up cash capital of $2,000, and an authorized capital stock of $4,000,000.[6] On September 23d, the Board of Directors passed a resolution for the acquirement of 5,524 shares of the optioned stock of the Laflin and Rand Company to be paid for together with the services of T. C. du Pont by $3,998,000 in the stock of and $2,209,600 in the bonds of the Delaware Securities Company.[7] This resolution of the Board was carried out, except that a small

[1] Gov't Exhibit Nos. 230 and 231, Pet. Rec. Exhibits, vol. iv, pp. 1979–1980.

[2] Cf. Ans. of the Del. Investment Co., Pleadings, p. 220.

[3] Resolutions of the Directors of the Del. Investment Co., Gov't Exhibit No. 166, Pet. Rec. Exhibits, vol. iv, pp. 1788, ff.

[4] Resolutions of the Directors of the Del. Securities Co., ibid., pp. 1756, ff.

[5] Answer of the Del. Securities Co., Pleadings, p. 225.

[6] Certificate of Incorporation of Del. Securities Co., Gov't Exhibit No. 144, Pet. Rec. Exhibits, vol. iv, p. 1742.

[7] Cf. note 3.

portion of the stock was utilized in partial exchange for the shares of Laflin and Rand outside of the 5,524 purchased under the terms of the option.[1]

In the same month the Delaware Investment Company was organized for the purpose of exercising the option held by T. C. du Pont for 950 shares of the stock of the Moosic Powder Company. It had, like the Delaware Securities Company, a paid-up capital of $2000. Its authorized issue was $2,500,000.[2] On September 23d, the Board of Directors authorized the purchase of the Moosic stock to be paid for, together with the service of T. C. du Pont in $2,498,000 full-paid non-assessable capital stock and $2,500,000 bonds.[3] Now both the Moosic and Laflin and Rand stocks were purchased with the bonds of these two companies plus a stock bonus. Consequently in consideration of the services of Thomas Coleman du Pont in securing the consent of certain stockholders of Laflin and Rand to the sale of their property and that of the Moosic Company the two Delaware subsidiaries, *i. e.*, the Delaware Securities Company and Delaware Investment Company, transferred to the 1902 Delaware corporation, *i. e.*, E. I. du Pont de Nemours and Company a majority of their issues of stock of $3,998,000 and $2,498,000 respectively.[4] In this manner the 1902 Delaware corporation secured complete control of all but ten of the companies in the powder and explosive business that had heretofore been members of the combination.

[1] Brief, vol. 2, p. 247.

[2] Certificate of Incorporation of the Del. Investment Co., Gov't Exhibit No. 145, Pet. Rec. Exhibits, vol. iv, p. 1747.

[3] Cf., p. 472, note 4.

[4] The total actual payment for the entire Laflin and Rand property including minority holdings was about $4,000,000 in bonds and a stock bonus of 20 per cent; for the 950 shares of Moosic about $2,350,000 in bonds and a 25 per cent stock bonus. Cf. Testimony of Pierre S. du Pont, Def. Rec. Testimony, vol. i, pp. 519–522.

These ten concerns were as follows: —

Austin Powder Company; California Powder Works; American Powder Company; Miami Powder Company; King Powder Company; Aetna Powder Company; Giant Powder Company; Judson Dynamite and Powder Company; Hancock Chemical Company; Equitable Powder Manufacturing Company.[1]

It will, however, be recalled that of these concerns both the Judson and the Giant Companies had been parties to the European Agreement;[2] that the Eastern Dynamite Company had working agreements with the Hancock Chemical Company which the Aetna had bound itself to observe,[3] and that the Aetna and Eastern Dynamite Company had also entered into an agreement with each other known as the "Memorandum of Understanding";[4] and finally that by another agreement the output of the King Company for a period of twenty-five years from 1901 was under the control of the 1899 Delaware corporation which had been reincorporated as the 1902 Delaware corporadion and Laflin and Rand.[5] It is also to be noted that the Miami Powder Company and American Powder Mills were at that time and continued to be down to 1904, partners to the Fundamental Agreement of 1896, and to the European Agreement down to the date of its discontinuance in the fall of 1906.[6]

[1] The Austin Powder Co., the Cal. Powder Works, and the Equitable Powder Mfg. Co. have been included in this list because they were not absolutely controlled. It should be borne in mind, however, that the 1902 Delaware corporation acquired, through Laflin and Rand, and the 1899 Delaware corporation 32 per cent of the stock of the first, 20 per cent of that of the second, and 49 per cent of that of the third.

[2] Supra, p. 466, note 2.

[3] Supra, p. 469, note 1.

[4] Supra, p. 465, note 1.

[5] Supra, p. 463, note 4.

[6] Brief, vol. 1, p. 79.

Between October, 1902, and July 28, 1903, the 1902 Delaware corporation further acquired stock in five companies [1] in which it had not hitherto had any direct interest and also made further acquisitions in the stock of its own subsidiaries.

In Pennsylvania there were operating besides E. I. du Pont de Nemours and Company, of Pennsylvania, four other companies: the Moosic Powder Company, in which the 1902 Delaware corporation had acquired a 31.66 per cent interest at the time of the Laflin and Rand transaction; the Consumers Powder Company of whose stock it held 25.23 per cent; the Enterprise Manufacturing Company in which it owned a 35.12 per cent interest and the Oliver Powder Company of whose stock it was sole owner.[2] On September 11, 1903, all these companies were merged in E. I. du Pont de Nemours and Company of Pennsylvania, a corporation with a capital stock of $1,275,000, 7 per cent preferred, and $725,000 common.[3]

On May 13, 1903, the E. I. du Pont de Nemours Powder Company was organized under the laws of New Jersey with a capital stock of $50,000,000 equally divided between common and preferred.[4] To the 1902 Delaware corporation it issued $15,600,000 preferred and $13,600,000 common (a majority in both classes) in consideration of the equity which the 1902 Delaware corporation held in all the stocks which it

[1] Twenty-five per cent of the stock of the Ferndale Powder Co.; 75 per cent of that the Conenaugh Powder Company; 39 per cent of the Judson Dynamite and Powder Company; 50 per cent of the Shenandoah, and 32.37 per cent of the stock of the Globe Powder Company.

[2] Gov't Exhibit No. 178, Pet. Rec. Exhibits, vol. iv, p. 1805–1806. Answer of E. I. du Pont de Nemours and Co., Pleadings, p. 135.

[3] Agreement for Merger, Gov't Exhibit No. 255, Pet. Rec. Exhibits, vol. iv, p. 2029 ff.

[4] Certificate of Incorporation, Gov't Exhibit No. 71, Pet. Rec. Exhibits, vol. i, p. 377 ff.

controlled.[1] The New Jersey company further guaranteed principal and interest of the obligations of the 1902 Delaware corporation incurred in the purchase of the properties of the 1899 Delaware corporation.[2]

Further combination followed swiftly. The New Jersey company next acquired 16,835 shares in the California Powder Works in addition to twenty per cent of its stock already held,[3] thereby securing control of the majority thereof. The California Investment Company was then organized by the 1902 Delaware corporation and T. C. and P. S. du Pont then caused it to issue its bonds for practically all of the capital stock of the Judson Dynamite and Powder Company.[4] This left uncontrolled by the combination only three companies, which had been parties to the agreement of 1896. These three concerns on July 1, 1904, entered into an agreement with the combination to continue until June 30, 1905, and thereafter unless three months' notice in writing of the discontinuance of said agreement were served.[5] The terms were practically the same as those of the Understanding of 1896[6], and the Dynamite Agreement of 1895.[7] In March, 1905, the agreement was discontinued by the action of the Aetna and the Miami companies.[8]

[1] Answer E. I. du Pont de Nemours & Co., Pleadings, pp. 124–125 and Gov't Exhibit No. 178, Pet. Rec. Exhibits, vol. iv, p. 1803, ff.

[2] Brief, vol. 2, pp. 285–286. By this series of operations the 1903 N. J. Co., acquired control of all the capital stocks formerly held by the 1902 Delaware corporation, the Hazard Powder Company and subsidiaries, Laflin and Rand and controlled companies and the Eastern Dynamite and controlled companies.

[3] See p. 476, note 1.

[4] Answer E. I. du Pont de Nemours Co., Pleadings, p. 140.

[5] The Sullivan Agreement, Gov't Exhibit No. 237, Pet. Rec. Exhibits, vol. iv, p. 1995 ff.

[6] Supra, p. 456, note 6.

[7] Supra, pp. 466–467.

[8] Brief, vol. 2, p. 292. It was claimed that the trade of those withdrawing, however, was respected by the combination, more especially because it was so insignificant. Testimony E. C. Ferriday, Def. Rec. Testimony, vol. i, pp. 48–53.

On July 1, 1903, a sales board was organized and a complicated system of salesmanship put in force by the combination with a system of reports to the " Trade Record Bureau " at Wilmington, Delaware. In further pursuance of the combination 49,950 shares of the California Vigorit Powder Company were purchased and between August, 1903, and May 8, 1909, all the capital stock of the Metropolitan Powder Company was also acquired by the combination.[1]

In 1903, the American E. C. & Schultze Gunpowder Company, a corporation of Great Britain, commenced to compete with the combination; but in the same year it transferred its properties and business to the E. I. du Pont Company, a subsidiary of the New Jersey company for a period of ninety-nine years in return for a yearly rental of £3,750.[2] In the same year the International Smokeless Powder and Chemical Company began operating a plant in the state of New Jersey where it manufactured Government Ordnance Powder for sale to the army and navy of the Government of the United States. To secure control of this corporation the du Pont International Powder Company was organized in Delaware[3] with a capital stock of $5,000,000 preferred and $5,000,000 common. It issued $10,000,000 of its bonds and a large share of its preferred stock for a majority of the capital stock of the International Smokeless Powder and Chemical Company.[4] From time to time, the stocks of other competing companies were also acquired.

[1] Resolution of Directors. Gov't Exhibit No. 188, Pet. Rec. Exhibits, vol. iv, pp. 1833–1834 and vol. iii, p. 1697.

[2] Indenture. Gov't Exhibit No. 307. Pet. Rec. Exhibits, vol. v, pp. 2359–2374. Cf., especially pp. 2359 and 2368.

[3] Certificate of Incorporation, Gov't Exhibit No. 76. Pet. Rec. Exhibits, vol. i, pp. 450, ff.

[4] Answer of the E. I. du Pont de Nemours and Co., Pleadings, pp. 145–147.

From this time to the bringing of suit in 1907 by the Government, the combination continued to operate substantially as before. Competition, it is true, was not eliminated, but was none the less reduced to a comparatively small portion of the trade, as is shown by the following table: —

PERCENTAGES SOLD BY COMPANIES CONTROLLED BY E. I. DU PONT DE NEMOURS POWDER COMPANY

Year.	Black Blasting Powder	Saltpeter Blasting Powder	Dynamite	Black Sporting Powder	Smokeless Sporting Powder	Gov. Ordnance
1905	64.6	80	72.5	75.4	70.5	All
1906	63.4	69.5	73	72.6	61.3	"
1907	64	72	71.5	73.6	64	"

In 1907, the habit of cutting prices was discontinued. In the latter part of that year the first printed schedule of prices was put out and the sales prices were subsequently held very close to these lists with little or no deviation except in the case of large contracts.[1]

In this connection a word ought to be said in regard to prices. At the very outset prices were fixed, immediately after the organization of the Gunpowder Trade Association. It has already been shown that increases in prices were made subsequent to the agreements of both 1886 and 1896. There is ample testimony also to show that prices were raised after the acquisition of the Laflin and Rand interests in 1902, again between 1902 and 1904, and also by the sales board in 1907. Unfortunately the data are not sufficient to permit the preparation of a table showing these various price changes. The reasons that make this a practical impossibility are two. The first is

[1] Testimony of G. F. Hamlin, Charles W. Phellis, F. C. Peters, F. W. Stark, and others. Def. Rec. Testimony, vol. i, pp. 60–61, 97, 185–186, 188, 202, 228–229.

that, as noted in the preceding paragraph, a printed schedule of prices was not published until 1907. Prior to that date prices were fixed and altered at the meetings of the various boards and committees, and are to be followed only in the minutes of these price-making organs. In the second place, prices in the powder trade, as in the oil business, have been largely local. Between various parts of the country there have been wide discrepancies. The general policy in prices appears to have been to charge what the traffic would bear. It should be borne in mind, however, that tho the policy of the powder combination has been to this extent analogous to that of the Standard Oil Company, the former has been much more limited than the latter by the factor of potential competition. The manufacture of powder does not require a very great amount of capital and high profits appear to call potential competition into being. For this reason it has been impossible for the Powder Trust, until recently, either to maintain fixity in prices, or to raise them to such a height as might have been the case under other conditions. Yet it would be entirely unsafe to conclude either that the profits on powder have not been excessive or that the high profits have resulted from other causes than the large degree of control exercised by the combination.

Decidedly the most interesting feature of the combination after the formation of the 1902 and 1903 corporations was the policy pursued with regard to subsidiary companies. The 1903 corporation and the Eastern Dynamite Company had up to 1907 acquired the stocks of more than one hundred corporations. In April, 1904, the dissolution of these companies was begun and in that year and 1905, a large portion

of them were dissolved. By 1907, sixty-four of the subsidiary corporations had passed out of existence.[1]

In a sense this is a comparatively new and original method of procedure. The du Pont Company has been the only industrial combination that has resorted to such a process upon an extended scale. The ultimate object of this policy was to create a single huge concern in the control of the powder trade and to vest absolutely therein the ownership of all the plants and factories which had formerly belonged to the various subsidiary companies. It was designed also, as soon as possible, to discontinue the Laflin and Rand and the Hazard Powder Companies, the Eastern Dynamite Company, and the Delaware Securities and Delaware Investment Companies.[2] Had the Government's suit not intervened this result would have probably been attained and we should have had a unique form of industrial combination. The property of the dissolved companies was purchased outright, and the title probably cannot be impaired by the courts. The problem of dissolution therefore that the courts have to deal with is one that presents apparently a greater degree of difficulty than was involved in either the Standard Oil or Tobacco decisions. As the Court remarks: "The dissolution of more than sixty corporations since the advent of the new management in 1902, and the consequent impossibility of restoring original conditions in the explosives trade, narrows the field of operation of any decree we may make." [3]

The Circuit Court adjudged the combinations in restraint of commerce in explosives and with attempting

[1] Cf. List of Companies "Opinion of the Court and Interlocutory Decree", pp. 31–32.

[2] Ibid., pp. 31–32.

[3] Interlocutory Decree, pp. 43–44.

to monopolize and monopolizing a part of such commerce. They were enjoined and ordered to dissolve. The decree was made interlocutory and the defendants were to be heard again,[1] as to the nature of the injunction and as to any plan of dissolution which they might have to suggest. It can hardly be doubted that such plan will be of great interest, owing to the peculiar policy pursued by the combination within the last few years, and the rapid approach that has been made to a great single monopolistic corporation. At the date this article goes to press, however, the dissolution plan has not been decided upon. At a hearing in the early part of March, lawyers and judges failed to reach an agreement.

WILLIAM S. STEVENS.

UNIVERSITY OF PENNSYLVANIA.

[1] Originally the court set the hearing for October 16, 1911, but it has been postponed from time to time.

TAXATION IN CHINA[1]

SUMMARY

The present system of taxation archaic, 482. — I. The Land and Grain Tax, 484. — Diversity of weights and measures, 486. — Divergences of taxes from the nominal levies, 489. — II. Customs, 492. — The Imperial Maritime Customs, 494. — Native Customs, 495. — Native Customs administered by Imperial Service, 498. — III. Likin, 499. — IV. The Salt Gabelle, 502. — V. The Grain Tribute, 506. — VI. Miscellaneous taxes, 507. — The finances in 1912, 509.

ONE of the greatest needs of China today is a reasonable system of taxation. That in force is archaic. Not only is there need of reform in the method of levying and collecting the taxes but in the expenditure of the revenue as well. A more accurate system of accounting is desirable. These needs have already received some attention from the Provisional National Assembly, which submitted last January a budget for the year ending in February, 1912. The system of taxation which I shall describe, tho deep-rooted in antiquity, is not likely to continue. It will probably disappear in the struggle now going on, no matter whether monarchy or republic may

[1] The following paper is based upon an examination of the *Ta Ch'ing Hui Tien* or Institutes of the *Ta Ch'ing* Dynasty, the *Chio Chih Ch'uan Han*, the official "Red Book" of China, and the *Tsao Yun Ch'uan Shu* or Complete Book of the Tribute; upon official reports and memorials published in the *Nei Ko Kuan Pao*, the official journal of the Imperial Government and successor to the Peking Gazette, and reports of the Imperial Maritime Customs.

The author has also consulted with profit the Journal of the China Branch of the Royal Asiatic Society; particularly that of 1887, containing an article by Professor E. H. Parker and Carles' translation of Zwehtkoff's report on the Salt Revenue of China, that of 1888 containing Oxenham's report on Land Tenure and the Condition of the Rural Population in China, that of 1892–93 with von Rosthorn's paper on the Salt Administration of Szechuen, and that of 1895–96 with an article by Professor E. H. Parker on the Chinese Revenue and another on The Financial Capacity of China.

The author acknowledges valuable assistance also from H. B. Morse's Trade and Administration of the Chinese Empire, particularly the chapter on Revenue and Expenditure; and also from a pamphlet by Sir George Jamieson on Land Taxation in the Province of Honan.

triumph, since both are committed to the adoption of modern methods.

Judged by the total amount of money contributed to the Peking Government, the taxation of China has not been heavy. A revenue of three hundred million taels, or one hundred and ninety-five million dollars, from three hundred million people is insignificant. Even the addition of the estimated revenue of the provinces makes but a total of a little more than six hundred million taels, or about four hundred million dollars.

But it is impossible to discover accurately how much is taken from the people. The viceroys and governors, prefects and magistrates, are bound by old custom to supply a minimum of revenue to their superiors, and this is usually the maximum sent. The taxes are practically farmed out to the official in charge. If he preserves peace and order and remits the usual sum to the treasury, he is not disturbed.

It must be remembered, also, that but a small part of the revenue is expended for the public welfare. There are fifteen hundred walled cities in China, yet none of them have water works except two or three that have introduced them very recently. Street lighting, save by the feeble glimmer of an occasional oil lamp, was unknown outside the foreign settlements until after 1900. The national police system was organized in 1905. Previous to that date night watchmen paid by private subscription were the chief reliance for protection against thieves. There was no system of public education until 1906. Most schools were maintained by private enterprise, tho there was found here and there a charity school supported by some generous individual. The Government confined its efforts to the establishment of a system of examina-

tions. Good roads are undreamed of, except that in a few cities macadamized streets have recently been constructed. In southern towns the streets are too narrow for carriages and are mostly paved with brick and stone. There are beautiful bridges in some parts of China, but the country roads are mere tracks, impassable in wet weather. If taxation has been light, the results which the people have procured in public works are even less.

I. The Land and Grain Tax

This has been the chief dependence of the government for revenue from of old. When the Manchus took over the government of China in 1644 A.D., they retained the fiscal system of preceding dynasties but lessened somewhat the rate of taxation.

In 1713 the land tax was definitely fixed for all time at the rate paid that year, and the imperial promise was given that it should not be increased. While this promise may have been literally fulfilled, the actual amount of money taken from the tax-payer has been very greatly increased by manipulation of the exchange between copper and silver and by various charges under other names than "land tax." Justification for the accretions may, perhaps, be found in the great changes that have taken place during two hundred years in the relative values of silver and copper money, in wages, and in land values. Tho the tax may have been originally intended to be proportionate to the value of the land and tho it does vary with the value of the land taxed, it is not as a fact levied upon land values, since the most valuable of all lands, that in the cities, is not taxed at all.

The land tax as levied in 1713 A.D. is a consolidation of the land and the poll tax. All free Chinese

subjects originally owed certain personal service to the state. The old-time *corvée* was commuted for a money payment, and this poll tax has been combined with that on the land.

Much of the land held by the princes is upon military tenure, having been granted to the ancestors of the present proprietors for services rendered at the conquest. These lands are not taxed. Other lands are occupied by military colonists, banner-men, settled in certain frontier districts or in other regions which required the presence of the soldiery for the preservation of peace or the protection of the grain transport. These lands are more lightly taxed than those held under ordinary tenure; but in a number of cases, military service being no longer required of the occupants, the lands have been transferred to the list of ordinary agricultural lands and the taxes increased accordingly.

The land tax (by which, it must always be understood, is meant the tax on ordinary agricultural lands) is of two kinds: a tax in money and a tax in grain. For instance, in Chihli, the metropolitan province, the taxable lands of ordinary Chinese subjects pay per annum from Tls. 0.0081 to Tls. 0.13 for each *mou*, besides rice to the amount of from one *sheng* to one *tou* and beans from 9 *ko* 8 *shao* to 4 *sheng*. This does not include the tribute grain, which will be considered separately.

The weights and measures of China, however, are not uniform throughout the empire. A *mou* is generally a little less than one-sixth of an acre, but, as Morse states [1] it varies from 3,840 square feet to 9,964 square feet. The tribute *tou* contains 629 cubic inches, but as a measure used by the people it varies from 176 to

[1] H. B. Morse, Trade and Administration of the Chinese Empire, p. 174.

1800 cubic inches. By the British treaty, for customs purposes a catty, or *chin*, is taken as equal to 21⅓ ounces avoirdupois, and a picul by weight varies from 94 catties for brown sugar to 140 catties for tribute rice at Nanking. In 1909, by imperial edict, standard weights and measures were adopted, the *tou* being fixed at 10.355 litres, the *mou* at 6.144 acres, and the catty at 596.816 grams; but this edict has not as yet had any practical effect.

The tax in kind is levied in measures of capacity, but in practice it is collected either by weight or in money and at rates of conversion fixed by the collector.

But the value of the Chinese tael is no less variable than are the weights and measures. It has changed greatly since the period when these taxes were laid. A tael is a Chinese ounce of silver and, whereas the ratio between gold and silver today is perhaps as 35 to 1, in the early part of the eighteenth century it was not more than 15 to 1. The purchasing power of silver money was then much greater, and a tael of silver paid in taxes in 1713 meant far more to the Chinese peasant than the same amount today. On the other hand, it must not be forgotten that the peasant uses few foreign commodities and that the exchange value of silver in gold has had but little effect upon the prices of articles in daily use by him. Copper has always been the money of the people in China and copper has appreciated in recent years as compared with silver, so that the peasant finds it somewhat easier than his grandfather did to buy a tael of silver, while at the same time he receives more copper for his wages.

These facts should be borne in mind, with reference to the figures used in the present paper. The following

equivalents for those employed in the Chinese statutes, tho not rigorously exact, are approximately correct for today:—

One Tael equals $0.65.
One Mou equals one-sixth Acre.
One Picul equals 3.4 Bushels.
One Tou equals 1.36 Pecks.
One Sheng equals 1.095 Quarts.
One Catty equals 1⅓ Pounds (average).
One Picul (weight) equals 133⅓ Pounds (average).

The limits of this paper do not permit me to state in detail the various classifications of land in the twenty-two provinces of China and the different rates of taxation. There is no uniformity; each province follows its own customs. I confine myself to citing a very few of the numerous and complicated provisions of the *Ta Ch'ing Hui Tien* relating to the subject.

In Shengking, one of the Manchurian provinces, ordinary agricultural land is taxed from $0.04 to $0.12 an acre in money, and in rice from 1.7 pecks to 1.54 bushels. Manchuria is but partially settled, and was of course much less developed two hundred years ago than now. Squatters sometimes settle on government lands, and in such cases rent is seemingly included in the tax, for they are required to pay $1.90 and 2.9 quarts of rice per acre.

I have already mentioned the rate for Chihli, the province in which Peking is situated. Reduced to western terms the tax varies from $0.032 to $0.51 an acre in silver and in grain from 1.09 quarts to 1.36 pecks of rice and from 1.07 quarts to 4.37 quarts of beans. Mulberry orchards are taxed $0.007 an acre.

In Kiangsu, the province which lies at the mouth of the Yangtze, the tax varies from $0.035 to $0.55 an acre in money and in grain from 1.2 pecks to 3.93

bushels of rice or beans, and from .03 pints to .39 pints of wheat or barley. There are certain lands in the province, however, which are rated higher and pay from $0.35 to $1.29 an acre with an addition of 4.8 quarts to 5.7 pecks of rice and from .013 to 1.05 pints of wheat or barley.

In Anhui, the next province west of Kiangsu, mulberry orchards are taxed $0.25 on each pound of raw silk produced. Chekiang, of which Hangchow is the capital, levies a tax on the tea lands at the rate of $0.001 and .15 pint of rice for each tea shrub.

Salt lands are taxed in various provinces; in Shantung at the rate of from $0.10 to $0.17 and 2.7 quarts of wheat or barley together with rice from 1.18 quarts to 2.33 pecks per acre. In Chehkiang the same sort of land is taxed from $0.06 to $0.56 an acre in silver and in grain from 2.4 quarts to 3 pecks of rice.

In the province of Kuangtung, of which Canton is the capital, the land tax varies from $0.03 to $0.87 an acre and the grain tax from 4.27 quarts to 1.88 pecks of rice per acre. In addition there is a small tax for drainage ditches and a tax of $0.26 per 100 square feet for irrigation.

In far-away Kansu, on the borders of Turkestan, the land tax ranges from $0.0008 to $0.50 an acre, and the grain tax from .2 quart to 6.66 pecks, together with a small amount of hay. The Turcoman tribes in addition pay a household tax of $0.20 plus an additional quantity of grain.

Taking the whole empire into consideration, we may say that the land tax varies from $0.004 per acre for the poorest land in Shansi to $0.99 per acre for the best in Chehkiang, and the grain tax from one gill of rice per acre in certain parts of Fukien to five and a half bushels an acre in some districts of Shansi. The

grain tax is as a rule commuted for a money payment, the rate as laid down in the statute varying from Tls. 0.50 to Tls. 1.20 a picul. We may take Tls. 0.80 a picul as the average price, which amounts to $0.155 a bushel. This is a very low rate as compared with present or recent market prices. Rice usually sells wholesale at about one dollar a bushel. It has of course been much higher recently owing to extraordinary conditions. It would be a mistake, however, to imagine that the farmer today commutes his grain tax at the low rate mentioned in the statute. I have already called attention to some of the methods employed by the tax collectors to increase the amount due from the peasant without adding to the nominal rate. The tax in money is levied in silver but paid in copper. A tael of silver at Shanghai exchanges today for 1,665 copper cash, and the imperial tael, therefore, should command about 1700 cash. But when the tax collector arrives he will demand much more than the difference between an imperial treasury tael and the local tael. Frequently he demands twice as much as the market rate. In addition he will demand certain fees, such as meltage, expense of collection, and the like, originally irregular, but now legalized by usage.

In the case of the grain tax the opportunities for increasing the amount due are still greater, for not only can the exchange between copper and silver be manipulated in commuting the tax, but the tax is levied in measures of capacity and often collected by weight, and the difference between the imperial and local standards of weights and measures provides an easy method of increasing the revenue. Sir George Jamieson [1] reports cases that came under his notice

[1] Land Taxation in the Province of Honan.

in which the tax in money had been gradually increased by as much as 186 per cent over the original levy and the grain tax by as much as 220 per cent. He estimates an average increase of the land tax throughout the empire by 128 per cent and of the grain tax by 210 per cent. If we accept these estimates and calculate the value of the grain at the wholesale rates for 1910, the land and grain tax paid by the farmer of Manchuria will amount to 1.2 per cent of the value of his first-class land, which Rev. John Ross put at $75.00 an acre.[1] Taking the lowest rate of taxation for the cheapest land, the tax in Shantung will amount to about one-third of one per cent and in Chihli to 2.2 per cent.

Mr. Morse[2] intimates that the taxation varies inversely as the distance from Peking; but the figures do not bear this out. The rates for Chihli, Kiangsu, Chehkiang, Fukien, and Kuangtung do not vary greatly, but they are somewhat heavier per acre in the southern provinces. In the provinces just mentioned the lowest rates are, Chihli, $0.032 per acre,; Kiangsu, $0.035; Chehkiang, $0.058; Fukien, $0.066; Kuangtung, $0.032. Taking into account the smaller amount of the grain tax in Chehkiang and Fukien, the rate is nearly the same for all.

Allowing for the greater fertility of the lands in the Yangtze Valley and in the other provinces mentioned, and their greater value due to density of population and proximity to the seaboard and water ways, the tax is, of course, proportionally lighter than in Chihli. But on the other hand these provinces contribute to the imperial treasury in ways unknown in Chihli — in silks, porcelain, tea, and other precious articles.

[1] Journal of China Branch of the Royal Asiatic Society, 1887.

[2] Trade and Administration of the Chinese Empire, p. 92.

The total revenue of the imperial exchequer from the land and grain tax is set down in the *Ta Ch'ing Hui Tien* at Tls. 25,608,605 or $16,645,593.25, but by the methods of accretion mentioned above this sum has grown to be Tls. 48,101,346 or $31,265,874.90, according to the budget submitted by the Provisional National Assembly last year.

This, however, is not the sum total of the tax as paid by the farmers. A very large proportion of the levy is retained for provincial and local purposes.

Formerly the amount to be retained was definitely fixed by law for each province. In Chihli, for instance, the provincial authorities were allowed to retain out of the original levy of Tls. 1,708,521.48 an amount equal to Tls. 745,299, and out of the accretions, legalized as a "supplementary tax" and amounting to Tls. 211,856.25, the additional sum of Tls. 102,052. The percentage allowed varies from province to province but does not differ greatly from that for Chihli. Parker, and after him Jamieson and Morse,[1] have calculated that a much larger sum is spent upon the provincial administration than upon the imperial; and bearing in mind the fact that the total sum levied upon any one province is the minimum expected and that the amount sent rarely exceeds the minimum, it is easily seen that the estimates of the writers mentioned are probably not too large. Morse puts the contribution to the Imperial Treasury from the land and grain tax at Tls. 25,887,000, that to the provincial treasuries at Tls. 67,060,000 and to local uses at Tls. 9,315,000, making a total of Tls. 102,262,000 or in our own currency $66,470,300. Others, however, estimate the total at not less than Tls. 375,000,000, or $243,750,000.

[1] Trade and Administration of the Chinese Empire, pp. 111–118.

In 1904, Sir Robert Hart published a pamphlet in Chinese recommending a readjustment of the land tax. The Government, fearing that agrarian disturbance might result, declined to adopt his recommendations, but they are of interest as showing what could be obtained by a fair system of taxation. He estimated the cultivable land of the empire at more than 666,000,000 acres, which, at a moderate tax of Tls. 0.10 a *mou* or Tls. 0.60 an acre, would yield a revenue of Tls. 400,000,000 or $260,000,000.

II. Customs

Another source of imperial revenue of ancient origin is the customs. Duties are collected not only upon imports and exports, but upon goods in transit from one portion of the country to another.

In 1818 A.D., when my edition of the *Ta Ch'ing Hui Tien* was published, there were thirty-three principal stations where such duties were paid, and since that date the number has been considerably increased. Each station extends its control of trade by the establishment of branches at the less important towns in the district under its supervision.

In 1853, during the Taiping Rebellion, the imperial government having lost control of Shanghai, the collection of duties payable by foreign merchants was undertaken as a temporary arrangement by the consuls of Great Britain, France, and the United States, the three foreign powers chiefly interested.

This arrangement did not prove to be entirely satisfactory, and in 1854 a commission representing the three powers was organized for the supervision of the foreign trade of Shanghai. It proved to be so efficient in its management of the customs that complaint was made by Shanghai merchants that they

were at a disadvantage as compared with those in ports where the lax methods of the Chinese officials were employed. In 1858, therefore, the Chinese Government agreed to extend the system of foreign supervision to other ports open to foreign trade. In 1861, the customs at seven such ports were thus administered, but only so far as foreign trade was concerned. This was the beginning of the Imperial Maritime Customs Service, which, with a large staff of Europeans and Americans aided by Chinese subordinates, has become the efficient instrument of the imperial government for the supervision of all trade throughout the empire conducted in vessels of foreign type.

The trade conducted in native craft, as well as the caravan trade, remained until November 11, 1901, under the jurisdiction of the old-time customs service, which, in contradistinction to the newer maritime customs, came to be known among foreigners as the "native customs."

After the so-called "Boxer" uprising, it became necessary to find revenues to pledge as security for the payment of the indemnity; and, the unpledged balance of the maritime customs being insufficient, it was decided among other measures to place the native customs stations located within fifty *li* (sixteen and two-thirds miles) of an open port under the administration of the maritime customs.

The Chinese Customs to-day, therefore, is divided among three services, each having its own field of operations, each employing its own methods and enforcing the collection of duties under a variety of tariffs, — the Imperial Maritime Customs, the Native Customs, and the Native Customs administered by the Imperial Service.

1. *The Imperial Maritime Customs.* In so far as the Imperial Maritime Customs is concerned, the levy of duties is uniform at all ports of the empire. The revenue derived is accurately known, being reported quarterly and annually in English and Chinese in the customs publications, which supply valuable statistics regarding the foreign trade of China, — the only accurate statistics of any kind published by the Chinese government.

The duty on exports is fixed by the tariff of 1858 agreed upon in the Tientsin Treaties with Great Britain, France, and the United States. This tariff is specific, but based upon a levy of 5 per cent ad valorem according to the values of 1858.

The tariff on imports is also specific, and was likewise in 1858 the equivalent of a duty of 5 per cent ad valorem. In 1901, the specific duties were found to have become much less than 5 per cent ad valorem owing to the decline in the gold value of the silver tael, and it was agreed in the protocol of September 7, 1901, that the import tariff should be revised and increased to an effective five per cent. This was done in 1902, and the duties so levied were converted into the specific tariff which is that now in force.

In addition to the export and import duties this service collects also (1) a coast trade duty amounting to one-half of the import or export tariff duty; (2) transit duties on internal trade, amounting to one-half the import or export duty, and levied in commutation of the likin payable at various stations on inland routes of trade; (3) tonnage dues on shipping, and (4) duty and likin on opium.

The receipts derived from these services in 1910 were as follows: —

Import duties,	Tls. 13,022,598.25	equals	U. S.	$8,594,914.85
Export duties,	Tls. 12,980,270.12	"	"	$8,566,978.28
Coast Trade duties,	Tls. 2,123,797.37	"	"	$1,401,706.26
Opium duties,	Tls. 1,212,998.72	"	"	$ 800,579.16
Opium likin,	Tls. 2,839,023.25	"	"	$1,873,755.34
Tonnage dues,	Tls. 1,329,023.81	"	"	$ 877,155.71
Transit dues,	Tls. 2,064,167.10	"	"	$1,362,350.29
Total	Tls. 35,571,878.62	"	"	$23,477,439.89

2. *Native Customs.* The tariff enforced by the native customs varies at every station, and in most cases it is antiquated. That of Santuao, when the station was taken over in 1901, dated from 1725 A.D., that at Foochow from 1731, that at Ningpo from 1785, and that at Shanghai from 1786.

In some cases the lists contain articles no longer known in the trade of the port and omit others that have become items of considerable importance. In all cases the original tax is increased by extra levies under a variety of names, such as the meltage fee at various stations, duty on the wrapper or box containing the goods, an equalization fee (*i. e.*, a percentage charged on the sum total of the duty), and other fees. Certain duties are charged in taels but paid in cash at artificial and exorbitant rates of exchange. Three different tariffs were applied at Kiungchow. The system, or lack of system, is further complicated by unusual methods of measurement, by differing weights, and calculation of various duties in different sorts of money. Then there are to be added application fees, boatmens' gratuities, and examiners fees, all of which have become fixed and legitimate charges.

As a rule but a small portion of the collection is sent to the imperial treasury, the greater part being retained to pay armies of superfluous assistants. No better description can be given, perhaps, than that of Mr.

Fred Carey in his report upon the native customs of Santuao, which was taken over by the Imperial Maritime Customs in 1901: [1] —

The Native Customs revenue is derived from two sources;
(1) Import and Export duties,
(2) Fees or dues.

The duties are assessed in accordance with a tariff compiled during the reign of Yungcheng, about A.D. 1725, and approved by that Emperor. The duties are low; they average about two and one-half per cent ad valorem, but there are some notable exceptions. For example coarse chinaware (in which is included pottery) pays more than ten per cent ad valorem. The tariff is obsolete and cumbersome. Many goods now met with are not mentioned in it at all, while in other cases the classification is too minute. Thus under silk piece-goods there are more than six hundred subheadings. Dues is the collective term now used to describe a large variety of fees which were formerly levied separately and under various names on junks and their cargoes. Though undoubtedly of irregular origin these charges may be said to have been legalized by time and usage. Some were probably introduced to make up for anomalies or deficiencies in the tariff proper; a few are of the nature of tonnage dues; others seem to have been voluntarily subscribed by traders to purchase partiality of treatment, clearance at night or quick despatch. But there can be no doubt whatever that the majority of the fees were instituted for the purpose of supplementing the official pay of the Native Customs employes, which under the former administration was entirely inadequate. For the same reason what were intended to be temporary or special fees often became fixed and recurring charges. . . .

The various fees were calculated and collected separately. A boat bound for Ningpo with a cargo of salt fish paid six separate fees. In addition there were package and license fees which had to be collected in one or other of nine different ways according to whether the boat carried ten, twenty, thirty or more piculs. . . .

At the time we assumed control of the Native Customs the amount of revenue that had to be remitted by the Tungchung office to the government was fixed at Tls. 9,000 per annum. In addition the director paid, it is said, Tls. 2,000 to the provincial authorities as the price of his appointment. The staff numbered nearly six hundred persons, whose salaries ranged from Mex. $0.50 to Mex. $5.00 a month. During the first year of our administration, 1901–02, the number of employes was reduced to 96. All monies collected were brought to account and the revenue rose at once

[1] Native Customs Reports, 1902; published by the Imperial Maritime Customs.

to Tls. 61,262. Later it was found possible further to reduce the staff, which now consists of seventy employes reasonably paid and comfortably housed.

The condition which existed at Santuao in 1901 still exists where the office remains under Chinese administration.

The revenue derived from the Native Customs previous to 1902 was a pretty constant quantity. A certain minimum amount was expected from a station and this amount was rarely exceeded, the surplus collected being retained for office expenses. The total amount expected from all stations in 1818 was Tls. 4,272,502, — at the present rate of exchange, $2,777,126. This amount included the original tax and the additional charges that had become legalized. How far it fell short of the total collected can be estimated from the report of Mr. Carey just quoted. If we assume that no more than one-seventh was reported, as in the case of Santuao, the total exacted must have amounted to Tls. 29,000,000. That Santuao was no exception to the general rule is shown by reports from other ports. Tientsin, for instance, in 1900 remitted Tls. 70,000 to Peking, but under foreign supervision this sum in 1906 had grown to be Tls. 1,195,015.76.

Generally speaking the tariff at the time it was fixed represented about three per cent ad valorem. In some instances it still remains an ad valorem tax at this rate. In most cases it has been converted into a specific charge per piece or per bale or per box.

One of the most important of the native customs stations is that of the Peking Octroi, which is classed with the Imperial Customs since its revenues are appropriated to the imperial household. Originally it collected duties at the city gates only. In recent

years it has extended the circle of its operations so as to cover all lines of trade within the vicinity of the capital, including the railway lines which were providing transit to Mongolia around the city. This office now has thirty branch stations, some of them as far as thirty-five miles from the city gates; and its receipts in 1908, as reported in the Peking Gazette, amounted to Tls. 314,964.47, equal to $204,726.90.

Now that so many offices of the native customs have been taken over by the Imperial Maritime Customs, the receipts have of course been divided. The collections by those still under Chinese administration are unknown, but their contributions to the imperial exchequer may be set down as not less than Tls. 3,000,000 or $1,950,000.

3. *The Native Customs administered by the Imperial Maritime Customs Service.* Nineteen principal stations and fifty-seven sub-stations of the Native Customs were taken over by the Imperial Maritime Customs in 1901. But at many of these the control is not complete. In some instances the smaller part of the collections is brought under the cognizance of the foreign officers. At several ports the greater number of branch offices lie outside the fifty-li limit, and are therefore entirely within the control of the old officials. Where the Imperial Maritime Customs has taken charge there is still no uniform tariff enforced, but the old tariffs have been simplified and various fees have been consolidated in one charge. Favoritism and corruption have been checked and the staff of each station has been reduced to a reasonable number and the salaries increased. The collections are more accurately accounted for than in the past, and the revenue therefore has been largely augmented. The total sum collected by these stations in 1909 was Tls. 3,144,335.63, or $2,043,818.16.

III. Likin

Likin stations, which are sometimes confused with those of the native customs and sometimes with those of the octroi offices at the city gates, are distinct from both. They are barriers where duties are collected, sometimes on one article of merchandise, sometimes on all, in transit from one part of the empire to another. This tax is of recent origin, dating from the time of the Taiping Rebellion, 1852–66. The imperial government, being in need of funds for the suppression of the rebellion, levied a tax on merchandise in transit, which, as the word itself indicates, was to be at the rate of one per mille ad valorem. The rate soon advanced, however, and the tax, fostered by the usual methods of manipulating exchange and incorporating unauthorized fees, grew so heavy as to become a burden upon trade. When the Taiping Rebellion had been brought to an end its collection had become so well established as to have the authority of "old custom," than which there is nothing more powerful in China. Despite the complaints of foreign and native merchants and the efforts of the diplomatic representatives to get rid of them, the barriers still remain and the duties are still collected.

The rate may be said to average about two and one-half per cent ad valorem, but there is no uniformity in the levy. The amounts paid are largely the result of bargain between the merchant and the collector, and inasmuch as there is frequently a choice of routes by which goods may be sent from one district to another, the likin stations not infrequently compete with one another to secure the patronage of a merchant by offering him lower rates than those of the schedule. They are found in greater or lesser numbers in most

of the provinces, but they are especially numerous in the lower Yangtze Valley, and in the provinces of Kuangtung and Kuangsi, in the southern part of the empire. There are five stations on the water route between Shanghai and Soochow, a distance of but eighty miles. Morse mentions [1] that along the Grand Canal between Hangchow and Chinkiang they are established at distances of about ten miles one from another, every alternate one collecting duties, the others preventing smuggling.

In the British treaty of Nanking (1842), it had been stipulated that merchants should be allowed to clear their goods, whether imports or exports, of all charges by the payment of one sum, which should not exceed a certain per cent of the tariff value of the goods. The treaty was signed, however, without stating what per cent of the tariff value should be paid. Complaints of excessive charges increased until 1858, when the Tientsin treaties provided that the charge should be as nearly as possible two and one-half per cent ad valorem, on payment of which the goods should be exempted from all further inland charges whatsoever.

Even this clear statement, however, was not sufficient to prevent the levy of other inland charges, even tho the goods had paid the commutation transit tax and were accompanied by a certificate to that effect. In the eyes of Chinese local officials, anxious to increase their own revenues, the provisions of the treaty referred only to foreign goods while owned by foreign merchants or still in their possession. The Japanese treaty of 1896, therefore, defined the practice still more carefully. The goods were to be exempted by payment of the transit tax from all internal taxes,

[1] Trade and Administration of the Chinese Empire, p. 107.

imposts, duties, likin charges, and exactions of every nature and kind whatsoever, no matter what the nationality of the owner or possessor.

Notwithstanding this provision, attempts are continually being made to increase the taxation of foreign goods imported into China and to add to the revenue from Chinese goods exported abroad. In some instances the friction between the foreign merchant and the Chinese official is due to misunderstanding. The production and consumption taxes and the octroi are all older than the likin and are levied for local purposes. The foreigner is apt to regard them all alike as likin. The Chinese officer is equally mistaken in supposing that the transit certificate clears the goods of transit duty only. Nevertheless this was the original intent of the treaties and the later provisions do not, perhaps, take sufficient account of the need of revenue for local uses.

The latest commercial treaties, the British of 1902, and the American of 1903, contain elaborate provisions for the abolition of "likin and all other transit duties throughout the empire," in return for which the United States agrees to allow a surtax in excess of the tariff rates both on imports and on exports. This arrangement is not in force until accepted by all the treaty powers, and up to the present but three nations have consented, Great Britain, Japan, and the United States.

The amount of the revenue derived from likin is unknown, and the actual collection from the people it is still more impossible to discover. The likin offices are entirely independent of the tax collecting agencies and do not publish any reports. Parker, and after him Morse,[1] estimate the total collection,

[1] Trade and Administration of the Chinese Empire, p. 110.

exclusive of likin on opium, at Tls. 34,382,260 or $22,348,469. The likin on foreign opium is collected by the Imperial Maritime Customs at the port of entry. Formerly native opium was taxed at the likin barriers, but in recent years all taxes on the drug have been consolidated into one charge of 115 Kuping Taels for every 100 catties, *i. e.*, $0.56 a pound. This is collected by a special bureau, and with the gradual suppression of poppy culture throughout the empire the receipts from this source are year by year growing less.

The Provisional National Assembly, in its budget submitted in January, 1911, estimated the total likin revenue at Tls. 44,176,541, or $28,714,752.

IV. The Salt Gabelle

One of the most interesting forms of taxation in China, of very high antiquity, dating from the seventh century B.C., is the salt gabelle, commonly called the government salt monopoly. The term is inappropriate, since the government does not engage directly in the manufacture of salt, and, except in Szechuen, does not concern itself directly with its sale. It merely exercises strict control of manufacture, transport, and sale. Salt is manufactured along the coast from sea water, in Shansi and Mongolia from salt lakes, and in Szechuen from deep wells.

For the administration of the salt gabelle the empire is divided into eleven districts. Each district has its army of officials and guards. They prevent illicit manufacture and smuggling; and they see that licensed manufacturers and merchants pay the proper fees and taxes, that they buy and sell at authorized prices and distribute according to regulation within the per-

mitted areas. Each district, however, has its own methods of taxation and administration.

Along the sea-coast the proprietors of the salt lands are taxed on their acreage, as mentioned above in discussing the land tax. In addition a vat license is imposed. The salt is evaporated, by private enterprise but under official supervision, in vats in the sun or in pans over the fire, and is transported under guard to the government depots, where it pays storage until it is sold to licensed merchants at a price fixed by the government. The sales are taxed at a varying rate but generally about Tls. 4 to Tls. 6, *i. e.*, $2.60 to $3.90 per *yin*. A *yin* varies from 225 to 600 catties according to locality, *i. e.*, from 169 to 450 pounds.

The licensed merchant has paid a considerable sum for his license. In 1887, E. H. Parker,[1] writing upon this subject, reported the cost for the southern Huai region as having been formerly Tls. 4000 each, *i. e.* $2600, but as reduced to Tls. 3600 or $2,340. But certainly the licenses are worth a much larger sum today, for the number allotted to each province is limited, so that a few men control the salt supply of the whole province. Morse estimates that new issues now would command Tls. 10,000 to Tls. 12,000 each, or from $6500 to $7800.[2]

These merchants must take their turn in buying salt and these turns come only about once in two years. The license permits the purchase of a definite amount of salt. In the Hupeh district, according to Morse, this amount is fixed at 3,750 piculs.

The merchant transports the salt under official supervision to the provincial station at which he is allowed to sell, and there storage is paid again until

[1] Journal of China Branch of the Royal Asiatic Society, "Salt Revenue of China."

[2] Trade and Administration of the Chinese Empire, p. 102.

it passes into the hands of the retail dealer at a price which is fixed by the government. The retail dealer also must have a license, and he sells to the consumer at a rate which is again determined by the government. These prices have been increased in recent years to cover the increase in taxation. At present in Peking a catty (one and one-third pounds) of salt sells at retail for about $0.03, that is about $2.25 for 100 pounds. The original cost of this 100 pounds is estimated as not more than $0.15. The remaining $2.10 represents the cost of transportation, taxation, and the profit of the merchant. The total taxation may be set down as about $1.75 per 100 pounds.

Von Rosthorn, in the Journal of the China Branch of the Royal Asiatic Society for 1892–93,[1] gives an interesting account of the salt administration of Szechuen, the westernmost province of China. Salt there is obtained by evaporating brine that is pumped up from deep wells. Other wells supply a natural gas which is used for heating the pans. It appears that various methods of taxation have been tried in Szechuen. The latest, which seems to give more satisfaction than those of earlier times, leaves production and ultimate sale to private enterprise. The government levies a tax on the wells. It also purchases the salt from the producer and transports it to depots for distribution, where it sells to the trade at a profit. In 1882 there were 8,830 salt wells in the province and 10 natural gas wells. 2,371,088 piculs of licensed salt were produced, besides a certain amount known as the surplus salt, which was distributed under special regulations. The revenue derived from the sale of licensed salt was Tls. 2,000,000 per annum. Inasmuch as 15 per cent of the total weight was allowed for

[1] "The Salt Administration of Szechuen."

waste, the salt that paid the tax amounted to but little more than two million piculs, so that we may say the tax in round numbers amounted to Tls. 1.00 a picul, that is $0.49 per 100 pounds. In addition to this, however, the salt is taxed again in crossing the borders into adjoining provinces. On passing down the Yangtze into Hupeh Province, for instance, it pays altogether 18 cash a catty, or an additional $0.49 per 100 pounds.

The surplus salt is sold in small quantities, not more than 80 catties to any one person, under strict regulations. It is again subject to a variety of taxation, such as the license fee of about $10 or $12 for every 133⅓ pounds, the duty, likin, examination, and other fees.

The actual amounts collected, whether along the coast or inland, are unknown. There are many different scales used and much manipulation of exchange, and there are no accurate statistics of produtions. In 1800 the output was reported as about twenty million piculs. It is today certainly not less than twenty-five millions, *i. e.*, 3,300,000,000 pounds, which if uniformly taxed at $1.75 per 100 pounds would yield a revenue of $57,750,000 per annum. Mr. Morse estimates the total collection from the people at Tls. 81,000,000, *i. e.*, $52,650,000, of which Tls. 64,000,000, or $41,600,000, is taxation. The fixed annual remittance to Peking is put down as no more than Tls. 13,000,000. The Provisional National Assembly in its budget for 1911 reckoned salt and tea taxes together as Tls. 47,621,920, *i. e.*, $30,954,248.

The amount of revenue derivable from this source is of interest to foreign governments, since it is one of the items pledged for the payment of the so-called

"Boxer" indemnity. Since the revolution now in progress has already caused China to default on payments due on the indemnity, it is not improbable that the creditor nations may have to take over the administration of the salt gabelle.

V. The Grain Tribute

Another unusual form of taxation remains to be noticed, the tribute or contribution in kind, a survival from primitive times. The contributions consist of silks, porcelain, tea, wood, copper, and many other articles rare and precious. But the most important is the contribution of grain. This is levied on eight of the provinces. Four of these for half a century or more have been allowed to commute the tax for a money payment.

The grain tribute consists chiefly of rice, but includes also wheat, barley, and beans. It is set aside for the support of the banner-men, who are located as garrisons in various parts of the empire. So long as they are carried on the rolls as in active service they receive pensions in money and in grain. The *Ta Ch'ing Hui Tien* gives the amounts of these pensions, which are graded according to the rank of the individual. An imperial prince of the first order receives Tls. 10,000, or $6500 per annum, and 20,400 bushels of rice. Common soldiers of the lowest rank receive Tls. 2 to Tls. 4, or $1.30 to $2.00 per month, together with a correspondingly small allowance of rice.[1]

The grain tribute is levied on the provinces rather than on individuals. Apparently the local authorities distribute the burden among the individual landowners. The clue to the rates per *mou* is found in

[1] It is estimated that the pensions of the Peking garrison, including the princes, amount to Tls. 7,000,000 per annum, *i. e.*, $4,550,000.

edicts contained in the "Complete Book of the Grain Tribute," which fix the levy upon certain foreshore lands reclaimed from the rivers. In one instance in Anhui the tribute was fixed at .24 *tou* per *mou*, *i. e.*, one-fifth of a peck per acre. In a case quoted by Morse the original levy was .0069 picul per *mou*, in another .00596 picul per *mou*. But in the first case the grain was priced at 6000 cash a picul and in the second at 7000. And in both the levy was increased by various additions, until the tax was twice as great as the original assessment in one case and in the other one and a half times as great; while if we commute the tax at the market rate of the grain, the sum demanded was not less than five or six times the original levy. In keeping with this treatment of the individuals the assessments upon the provinces have been gradually increased by various supplementary charges, such as commutation payments in lieu of matting to enclose the grain, poles, and other wood for the bins and the granaries, cost of transportation, and repairs to the transport boats.

The original assessment was 3,300,000 piculs, which a hundred years ago had already grown to be about 5,300,000 piculs. If we take it to be now not less than 6,000,000 piculs and convert it at 6000 cash a picul (as in one of the cases cited by Mr. Morse) and reduce the cash to taels at a fair rate, we shall find the value of the grain tribute to be not less than Tls. 21,000,000 or $13,650,000 per annum. Morse himself estimates it at more than Tls. 25,000,000, *i. e.*, $16,250,000.

VI. Miscellaneous Taxes

One curious source of revenue mentioned in the budget of 1911 is the sale of rank; not patents of nobility, but the right to wear an official button.

By this method it was estimated that Tls. 5,652,333, or $3,661,016, would be raised in the year mentioned.

The tax on tea varies from province to province, but we may take that of Hupeh as fairly representative. A report of the Commissioner of Customs at Hankow in 1888 stated that the various taxes known there amounted altogether to about Haikuang Tls. 4.27 per picul, including the export duty. The total export of tea of all kinds in 1910 was 1,560,800 piculs. If we assume the average taxation to amount to Haikuang Tls. 4.00 per picul, the revenue from this source would amount to Tls. 6,243,200, or $4,120,512.[1]

Other sources of imperial revenue are the reed tax, which is levied upon the tall reeds grown on government lands and used for basket work and fuel, the fisheries tax, and mining royalties.

For local purposes taxes are levied sometimes upon the houses of a city according to size. Pawn shops and wine shops are licensed. The sale of opium and the permit to smoke it are also licensed. Transfers of real estate must pay a fee for registration amounting generally to 8 per cent of the selling price as recorded in the deed. Recently the last mentioned fees have been devoted to the support of the new school system.

In some cities there is a vehicular tax, ostensibly for the upkeep of the new streets which have been constructed. I have referred already to the octroi, and the production and consumption taxes levied for municipal purposes. These undoubtedly produce considerable revenue, but the amount is unknown.

Owing to the increased demand for funds occasioned by the reforms of the past ten years, new sources of revenue are being continually sought. Several times

[1] This does not of course include the revenue from tea consumed in China, the tax on which will average probably Tls. 1.50 a picul.

recently the attempt has been made to introduce a stamp tax, and the stamps indeed have been printed. Commercial documents of all sorts were to be subjected to a light impost. But the opposition encountered has up to the present prevented the enforcement of the decree.

Accepting the estimate of the Provisional Assembly and adding thereto the tea tax and revenues from sale of rank, which are not included in the Assembly's estimate, the miscellaneous taxes may be set down as Tls. 38,059,375, or $24,738,594.

This inquiry into the fiscal system of China enables one to estimate the total amount of the imperial revenue as follows: —

Land and Grain Tax	Tls.	48,000,000 =	$31,200,000
Imperial Maritime Customs	"	36,000,000 =	$23,400,000
Native Customs administered by I. M. Customs	"	3,100,000 =	$2,046,000
Native Customs administered by Chinese	"	3,000,000 =	$1,950,000
Likin	"	43,000,000 =	$27,950,000
Salt Gabelle	"	57,000,000 =	$37,050,000
Grain Tribute	"	21,000,000 =	$13,650,000
Miscellaneous Taxes	"	38,000,000 =	$24,700,000
Total	Tls.	249,100,000 =	$161,946,000

There should be added the income from imperial property, which is set down in the budget as about Tls. 47,000,000, *i. e.* $30,550,000, and the proceeds of loans, Tls. 3,560,000, or $2,314,000, thus making a grand total of Tls. 283,210,000, equivalent to $184,086,500. The Provisional National Assembly estimates the total at Tls. 301,910,296, and Morse sets it down as Tls. 284,154,000.

The provincial revenues were estimated in 1911 by the Ministry of Finance at Tls. 322,000,000.

It would scarcely be proper to close this survey without some reference to China's ability to meet its foreign obligations. The various foreign loans and the "Boxer" indemnity together total nearly £142,000,000, the charge on which for 1912 will amount to about £9,000,000. If we regard the revenue of China as amounting to £40,000,000, which is about the estimate of the Provincial National Assembly, there will be left but £31,000,000, for all the expenses of the Government, a sum which would seem totally inadequate for such a vast empire.

The Board of Finance estimated the available revenue at £39,513,975, and the necessary expenditure at £45,061,206, thus leaving a deficit of £5,547,231. The Provisional Assembly thereupon increased the estimate of revenue to Tls. 301,910,296, that is about £40,000,000, and cut down the proposed expenditure by Tls. 77,907,292, making them Tls. 298,448,365, thus securing a balance in favor of the Treasury of Tls. 3,461,931, the equivalent of £460,645.

These figures confirm the opinion expressed in the opening sentence of this paper, that one of China's greatest needs at present is a revision of her fiscal system. China is naturally a wealthy empire. Its resources are vast and largely undeveloped and its people are industrious and frugal. There is no good reason why it should not with ease meet every financial obligation. But the vast changes contemplated in the program of reform necessarily call for a great increase in expenditure, and this can only be met by a corresponding readjustment of the finances.

E. T. WILLIAMS.

AMERICAN LEGATION,
PEKING, CHINA.

REVIEWS

MOORE'S LAWS OF WAGES[1]

It is with no little diffidence that I undertake a notice of Professor Moore's book. The mathematical tool is not at my command, and I can only accept with gratitude the results of its use by Professor Moore. Of his mastery of it there can be no doubt; nor can there be doubt of the high scholarly quality shown throughout this volume. Professor Moore brings to his task a wide acquaintance with the most difficult parts of the literature of economics and statistics, a full appreciation of its large problems, a judicial spirit, and a dignified style. He is one of the select few who are able to apply the methods of physical science to social phenomena, and has high hopes for the progress of economics under these methods. His book is intended to give examples of the results which may thus be reached. Regarding these results, as they impress a non-mathematical economist, I venture to say something.

The several chapters take up certain laws of wages, and their statistical confirmation. The topics may be divided into several groups: the relation of wages to the means of subsistence and the standard of living; the relation of wages to strikes and to large-scale production; and, most interesting of all in its bearing on economic principles, the relation of wages to the specific productivity of labor. This is not the order in which the subjects are arranged in the book, but is that in which it will be convenient to consider them here. Needless to say, in all of them Professor Moore recognizes the existence of two distinct problems. On the

[1] Laws of Wages; an Essay in Statistical Economics. By Henry Ludwell Moore, Professor of Political Economy in Columbia University. New York: The Macmillan Co. Pp. 196.

one hand, there is the question what sort of correlation in fact exists: how wages are found to vary with the cost of subsistence, or to be raised when there are strikes, or to be higher or lower as production is on a larger or smaller scale. On the other hand, there is the more fundamental question of the explanation of the correlation: whether the connection is one of cause and effect, or (say) of the action of a third cause on both the compared phenomena. On the first set of problems, the existence and extent of correlation, I can do no more, to repeat, than accept gratefully Professor Moore's skilful and lucid exposition. On the second set, I confess to some doubts and difficulties.

On the group of problems first considered in the book, — the relation of wages to the price of necessaries and to the standard of living, — Professor Moore uses the French Report of 1893–97 on wages. Comparing the different departments of France, he finds that there is no such correlation between wages and the cost of subsistence as to indicate a close relation, still less a causal relation. But he does find a close correlation, tho "not so high as to justify the inference of a cause and effect relation" (page 176), between wages and the standard of living. The standard of living is measured by the ordinary *prix de pension*, or price of board and lodging, in the different departments. Professor Moore explains (in a footnote, p. 38) that the *prix de pension* absorbs 76 per cent of the wages of unskilled laborers, and "therefore represents with a high degree of accuracy the effort of the unskilled laborer to maintain a standard that varies from department to department." I gather that he believes mere habituation, and insistence on better board and lodging, operate to bring about higher wages. It may be so; but possibly the connection runs the other way, — higher wages, due to other causes, may lead the laborer to spend more liberally on his *pension*. Local variations in wages are doubtless greater than economists have usually assumed, and little has been said about their causes. It would seem to be clear, however, that Professor Moore's method of inquiry throws no light on a

more fundamental relation between wages and the standard of living, — that which is connected with the movement of population. We might expect, for example, that the birthrate would decline if wages were below a given standard of living, and rise if they were above it. Perhaps, in a strict sense, this is the only causal connection between wages and the standard of living which could be considered permanent.

A second set of inquiries in the book relates to the influence on wages of labor organizations and strikes, and of large-scale production. On the former Professor Moore uses the United States Department of Labor's Report on Strikes and Lockouts (1906). He finds that strikes ordered by labor organizations are somewhat more likely to succeed than strikes not so ordered; that strength of organization goes with probability of success; and that the greater the duration of a strike, the less its probability of success. Professor Moore would be the last person to say that these were novel conclusions; we are none the less indebted for their exact and guarded formulation. On the other point, the relation of wages to large-scale production, the results are distinctly novel. On the basis of Italian statistics it is concluded that the larger establishments pay the higher wages, select the younger and more efficient laborers, give more employment and more continuous employment; and on the basis of French statistics, that their working day is shorter. These interesting generalizations unfortunately seem to rest on narrow data. Most of them are derived from an Italian investigation of 1905 on the employment of women in the textile industries of that country (excluding silk). We cannot be sure that the same results would be found in countries like England, Germany, the United States. One would much wish to ascertain whether the same correlations appeared in the more advanced countries.

We come finally to those parts of the book which have most interest for economic theory, — on the relation of wages to the productivity of labor. Professor Moore finds that the specific productivity theory is verified by his re-

sults. But the significance of these results depends very much on the sense in which one takes the theory. I confess that I had understood it in a different sense from that of Professor Moore; or rather, the difficult and disputable points seem to me different.

Every economist is familiar with the distinction between the causes that act on general wages and those that act on the wages of particular individuals or particular groups. As regards the former, we are still floundering; as regards the latter, we are on comparatively firm ground. As regards general wages, we have discarded the wages-fund doctrine and the residual-claimant doctrine, and we are now threshing out the specific-product doctrine. But on particular wages there never has been occasion to revise older theories to the same extent, and there is now an approach at least to a consensus of opinion. Adam Smith's teachings on the differences of wages are still useful as a starting point; Cairnes's doctrine of non-competing groups made clear the problem and the direction in which to look for its solution; the marginal principle supplies the key. Relative wages depend on the marginal efficiency of each several kind of labor; a conclusion which is in the nature of a corollary to the proposition that the exchange value of commodities and services depends on their marginal utility. One may use the phrases "marginal efficiency" or "marginal serviceableness" or "marginal productivity" or "specific productivity"; they mean essentially the same thing. A more efficient worker gets more than a less efficient. On all this we are agreed, and on the main lines of explanation.

But the statements that there is a separable product of labor, distinct from the product of capital, and that the general rate of wages depends on this specific product of labor, seem to involve different reasoning; and it is reasoning on which we are by no means agreed. Some of us believe that these propositions (taking them together) lead to reasoning in a circle. Such, for example, is the opinion of Professor Böhm-Bawerk; such seems to be that of Professor

Marshall.[1] These two things, at all events — particular wages and general wages — do not seem to be kept distinct with sufficient clearness in Professor Moore's pages. Most of his calculations and correlations on specific productivity relate to relative wages, and have no significance as regards general wages. In Chapter IV, he considers the distribution of ability and its effects on relative wages; and, in Chapter VI, the variation of wages with age and with the efficiency that depends on age. These are interesting and valuable discussions. But they have no probative force as regards the difficult and disputed problem, — how disentangle the product of labor in general from that of capital in general.

The only passages that bear on this disputed problem are in Chapter III; and even here they seem to me of doubtful pertinence. The data are the wages of coal miners in different regions of France. They are considered in three parts. In the first part, it is shown that, "in an industry in which labor plays the chief rôle," wages (in money) vary with the total product (in money). This may signify a mere monetary change; it is consistent with almost any theory of wages except the "iron law." In the second and third parts, it is maintained that the *share* of the product which goes to laborers becomes larger as there is increase in the proportion of capital (assumed to be indicated by amount of machine-power); and that, in different parts of France, the *share* of the laborers increases most rapidly where the relative amount of capital increases most rapidly. Both of these results, as is emphasized by the italics which I have used, relate to the share or proportion of product going to the laborers, not to wages per man. At the very outset (Introduction, p. 7) Professor Moore states the theory as one relating to "the share of the product that goes to the whole class of laborers in the form of general wages"; and

[1] See Böhm-Bawerk's article in this Journal for Feb. 1907, vol. xxi, p. 247. Marshall remarks that "illustrations of this kind [the diminution of output from successive increments of capital] cannot be made into a theory of interest, any more than into a theory of wages, without reasoning in a circle." Principles of Economics, 6th edition, p. 519. I have stated my own opinion in an article in this Journal for May, 1908, vol. xxii, p. 333.

to this form of the doctrine his illustrations and correlations are confined.

I had always supposed, however, that the specific productivity theory of distribution was concerned not with the proportions between total wages and total interest, but with the *rates* of wages and interest. Such seems to be the necessary implication of the reasoning on which it is based. When it is said that the addition of successive units of capital causes the specific product of capital to fall, the conclusion would seem to be one relating to the unit of capital and to the return per unit. The absolute amount going to capital may none the less rise, and the proportion of the total product going to capital may also rise. Notwithstanding a lowered rate of interest (assuming this to follow from a lowered return per unit), a large principal may secure a higher absolute amount of interest; and it may also secure a larger share of the product of industry. Similarly, when it is argued that an increase in the number of laborers (capital remaining the same) causes the specific product of labor to be less, it seems to be meant that wages *per man* become less; and, conversely, that wages *per man* become greater if there is diminution in the number of laborers as compared with capital.

I might hesitate to interpret the specific-product doctrine in this way were it not that the same interpretation appears in Professor Moore's own pages. He writes that Professor Clark has shown that "a reduction in the average amount of capital with which a laborer works" brings about "a fall in the general *rate* of wages" (p. 57; the italics are mine). And again, in the same paragraph, the "general *rate* of wages" is referred to, in an exposition of Professor Clark's views. Yet the next paragraph begins, "Our present query has this form: does fluctuation in the laborer's *relative share of product* vary directly with the fluctuation in the relative amount of machine power with which he works?" The italics are again mine; they point to my reasons for thinking that Professor Moore's figures relate to a problem different from that of the specific-product

doctrine. They are not inconsistent with that doctrine; but they do not seem to me to confirm it.

Quite apart from their theoretical bearings, Professor Moore's results on relative shares seem to me too good to be true. He notes that they rest on a "narrow statistical basis" (p. 66); and they are hardly in accord with familiar facts. No doubt it is true that capital increases in modern countries faster than the number of laborers; that capital per man becomes greater; that the rate of interest shows on the whole a slight tendency to decline; that wages per head show a tendency to rise. But all the indications are that the proportion of the total income which goes to capital is becoming greater, not less. If Professor Moore's figures were representative, they would show that the proportion is becoming less, not greater. Much more evidence than he brings is needed to prove that there is a tendency so inconsistent with what we observe on all sides.

The most significant part of all this reasoning is in its social bearings. Professor Moore concludes that "if a collectivist state is to have any degree of stability, the principles followed in the apportionment of labor and capital in production *and in the distribution of the product of industry* must be the same in the collectivist state as in the present industrial state" (page 191; the italics are mine). Possibly this can be proved as regards the distribution of income among workers of varying abilities. It raises questions, to be sure, about the necessity of giving high reward in order to induce the fullest exertion of ability, on which the socialist has some strong grounds for differing with Professor Moore. But in any case the reasoning bears only on the contributions of workers, not on those of all the "factors of production." In Professor Clark's own writings, there is not infrequently a smooth transition from the workers who contribute to the "factors" which contribute, — from human beings to capital and land; and there is a doctrine, more or less explicitly put forth, that the grounds which are supposed to make it just that a worker should be paid in proportion to his product make it just that the owner

of a factor of production should also be paid in proportion to *its* "product." The same statement, or at least implication, appears in Professor Moore's closing pages. His discussion is brief, and I am not sure precisely how far and in what form he would deduce this social consequence. It seems to me an unwarranted one, even granting the specific-productivity premise.[1] If we are to prove the "solidarity of industry" and the inevitableness of such distribution of wealth as appears in our modern societies, we must use reasoning more effective than this. Possibly the specific-product theory, stated with care, serves to explain distribution under the system of private property; the differences between those who accept the theory and those who do not may be at bottom only on matters of phraseology. But at the very best it can serve only as an analysis of the existing situation, not as a defense. My most serious quarrel with it is in that sort of justification of things as they are which Professor Moore's closing paragraphs seem to endorse.

F. W. TAUSSIG.

HARVARD UNIVERSITY.

[1] As was long ago pointed out by Professor Carver, when reviewing Professor Clark's Distribution of Wealth, in this Journal, vol. xv, p. 579.

NORDAU'S INTERPRETATION OF HISTORY[1]

Since the publication of his famous work on Degeneration[2] Max Nordau has been recognized as the most merciless of our modern critics. His reputation as a disillusionizer will be greatly enhanced, in the minds of the discriminating, by the work before us. Yet, from the very nature of the case, a great many will be unable to see what the author is driving at. In his chapter on the Psychological Premises of History, he describes the mind of the average cultivated man as follows: "A stream of words and combinations pour in upon him from language, intercourse, school, newspapers, and books, and some of them remain in his memory as formulae. If he is provided with a good supply of such formulae, and can produce one on any occasion that requires it, he passes in his own estimation, and that of his fellows, as a cultivated man. But his repetition of formulae is mere psittacism, and his word knowledge has nothing to do with real knowledge."[3] Such a man will not find many of his favorite formulae repeated in the work before us. In the physical and experimental sciences, where the student comes into contact with objective reality, this kind of word knowledge is speedily dissipated. Unfortunately, in the moral and social sciences, and particularly in the writing of history and its interpretation, and most markedly of all in the study of law, there is no natural touchstone by which real knowledge can be separated from word knowledge. The result is that they who continue glibly repeating formulae can still pass as scholars. Such scholars will not be able to understand a man who looks through the formulae, and describes succinctly and with particularity the realities which lie behind.

[1] The Interpretation of History, by Max Nordau; translated from the German by M. A. Hamilton. N. Y., Moffat, Yard & Co., 1911. Pp. 419. $2.00.

[2] Degeneration, by Max Nordeau. N.Y., D. Appleton & Co., 1895.

[3] P. 265.

The author describes history in the narrow and conventional sense as that class of past events in which we choose or happen to be interested from time to time, and which we describe in terms with which we have become familiar in our own social surroundings. What is called historical science, on the other hand, is the mere technique of historical method. It consists of a system of rules and methods for finding, sifting, and weighing the fragmentary evidences upon which the history of a given period is to be constructed. It occupies the same relation to history as microscopy to biology or telescopy to astronomy. Historical science, thus described, is not history, tho it is a means by which we may discover the real subject matter of history. This subject matter is that interminable series of adjustments by which the human species, or some branch of it, has fitted itself into its environment. To quote Nordau himself: "History in the widest sense is the sum of the episodes of the human struggle for existence." [1] Concerning the old puzzle, — does man make history or does nature make history through man, — the author has little to say beyond a mild ridicule of those modern historians who affect to despise the honest old chroniclers "who faithfully devote the same space to recording dearths, earthquakes, and floods, hailstorms, unusual cold in winter or heat in summer, and the appearance of comets, that they gave to wars, coronations and the death of princes, thus assigning the same importance to events resulting from the operation of the human will and those originating in the blind chance over which man has no control. . . . The modesty of the honest old chroniclers is more consonant with the true function of the historian than the lofty confidence of those modern adepts who arrogate to themselves the decision as to what is and what is not important in the wide stream of the processes of the universe, of nature, and of human life." [2]

However, if history books are written to sell or to be read, and if readers are more interested in coronations, July massacres, and military campaigns than in records of tem-

[1] P. 13. [2] P. 16.

perature, earthquakes and hailstorms, obviously the historian would be unwise not to discriminate and decide what was, *for his purpose*, important or unimportant. Readers are undoubtedly more interested in the doings of men than in the records of the weather bureau or of the seismograph. Who ever heard of a novel without men and women in it as the chief actors? The historian is as much subject to the interests of the reader as is the novelist. But even in the portrayal of the actions of men and women, whether by the historian or the novelist, there must be discrimination, and the writer must "arrogate to himself the decision as to what is and what is not important." Even the most pronounced realist in the realm of fiction, like the historian, "as a matter of fact, selected by subjective inclination, with reference to an end subjectively conceived, a few aspects of actuality which he then linked together as suited him and interpreted in accordance with his own idea." Thus "History, at the moment when it thinks itself most objective, is merely naturalistic fiction, merely 'history through the medium of temperament.'"

The author's chapters on The Customary Philosophy of History, on The Anthropomorphic View of History, are strong and pungent, but may be criticised as attempts to slay the dead. The chapter on Man and Nature smacks of Buckle but emphasizes the Darwinian ideas of adaptation, both active and passive. That on Society and the Individual very effectually punctures the bubbles of those social psychologists who are trying to prove that society is the reality and the individual only an abstraction. That on The Question of Progress is, in some respects, the most penetrating of all. Progress, in any absolute sense, is, according to the author, logically impossible. What we call progress is, in every essential particular, like a change of fashions. Having ceased to care for the things we once cared for, and having learned to care for things which we formerly did not care for, we now proceed to get the things we now care for. When we succeed, we call it progress. Are the things we now care for better than the things we

formerly cared for? Of course we think so, otherwise we should not have changed our minds.

But is there no real test? To the reviewer, it seems that there is a test which will determine whether or not we are changing for the better or the worse. That is the test of survival. If the things we now care for help us in the struggle for existence and enable us to survive better than did the things we formerly cared for, then there is real progress; otherwise there is not. At any rate, the world will pass more and more into the hands of those people whose desires, tastes, appetites, and activities give them greater power to resist the attacks of enemies, invisible as well as visible, greater control over the forces of nature, and greater power to multiply and to spread. This test rests upon something besides opinion, or likes and dislikes. However much we may prefer the things we are now achieving to the things which were formerly achieved, and however much we may therefore be convinced that we are progressing, if the things which we are now achieving are actually reducing our power of resistance, our power of control or conquest of the forces of nature, then we are not progressing but degenerating. The question of progress remains therefore something deeper than a mere change of fashion, or a matter of likes and dislikes.

T. N. CARVER.

HARVARD UNIVERSITY.

NOTES AND MEMORANDA

PRICE AND RENT

Rent may adequately be defined as an income or return received because of the existence and control of some economic privilege or desirable market opportunity which is not susceptible of depreciation in the sense of physical wear and tear or deterioration. According to this definition, land rent is only one form of rent. On the other hand, all returns from special or monopoly privileges may be classified as rent. The presence or absence of physical deterioration is then the distinguishing feature which makes possible the tracing of a fairly distinct line of demarkation between interest and rent. From this viewpoint, the concept land is narrowed until it becomes mere extent or space which furnishes support or standing room; soil is capital. In agriculture, the soil sustains the same relation to land that the factory building does in manufacture. The return from land, which of course is not subject to physical deterioration, is rent; but the return from the soil, which is subject to physical deterioration, should be classified as interest. A franchise is a monopoly privilege not susceptible of deterioration from the engineer's or the physicist's viewpoint; and, therefore, any return received because of the control of a franchise is a rental return. In short, rents are due to the ownership of market opportunities of various sorts, to the ownership of some unique and special privilege. Rent is never a return received because of the use of tangible capital which is subject to physical wear and tear and deterioration; such a return is interest.

It will, however, doubtless be urged that there is as yet no monopoly in land ownership; and, consequently, land

rents and monopoly returns are two different and distinct kinds of income which should not be placed together in the same category. That the generally accepted technical definition of monopoly will, up to the present time, exclude the ownership of land from the category of monopoly, must be granted. But even the most enthusiastic theorist of the *laissez faire* school will admit, altho perhaps reluctantly, that the ownership of a particular parcel of land is an exclusive privilege. No two parcels of land are exactly alike in all respects. Therefore, to own land is to possess a partial monopoly and to be favored by certain unique and special privileges. Differential land rent is due to the absence of perfect competition between different parcels of land.

The return from the operation of mines does not readily admit of classification. Minerals are taken out of the mine and the mine, unlike a waterfall which is automatically renewed, depreciates in value; but the minerals are not replaceable as is a worn-out machine, the chemical constituents of the soil, or the water of the waterfall. On the other hand, there is a return from mining operations which is not due to some intangible privilege, to mere location or to the use of capital goods capable of deterioration. The mineral wealth which is taken from the mine is an irreplaceable "natural" gift. And consequently the surplus from mining operations over and above the expense of carrying on the industry (including depreciation and interest upon the capital actually invested in mining equipment) may logically be considered as a rental return. The income from the ownership of mineral wealth or of a waterfall is called rent, while that from the ownership of soil is termed interest. The item of replacement is here made the distinguishing characteristic. A good soil can be maintained year after year only by replacing the chemical elements which are required for plant growth; it is in reality a peculiar and unique form of machinery. But on the other hand, as indicated above, mineral wealth is not replaceable; and the water in the case of the waterfall is replaced automatically.

Rents are of two kinds: (1) differential rents measured from an intensive or an extensive margin; and (2) intensive marginal rents which are more commonly designated as monopoly gains, forced gains, returns from special privileges, or returns from "pulls."[1] Both varieties of rent are due to the absence of perfect competition among the three factors of production, — land, labor, and capital, — and to the presence of special privileges or unique opportunities of some sort.

Land — that is, extent, space, standing room — is needed in connection with all human activities. And differential rent, which is a measure of desirability, appears because of the existence of a demand for various products or goods coupled with the presence of land of varying grades of desirability. The exact amount of differential rent depends upon both the demand for the products of land and upon the amount and nature of the supply of land. With a given land supply, present or potential, and no change in industrial methods, differential rents increase and decrease as the demand for products varies.

If perfect competition as regards labor and capital existed and labor and capital flowed with perfect freedom from one industry to another, the intensive (or extensive) margin would be the same in all industries and occupations. Differential land rents would in that hypothetical case absorb all surplus over and above the payments made to labor and capital on marginal or no-rent lands. Any obstruction to perfect competition — monopoly power, custom, organization of labor, artificial scarcity, forced gains, "pulls," and the like — whether the result of prevision, forethought, business acumen, or chance which interferes with perfect competition and the hypothetical frictionless flow of capital and of labor halts the investment of capital or the employment of labor, or both, in a given industry at some point above the normal margin. As a consequence, the supply — the flow of products — in the industry is diminished, and

[1] For a more detailed examination of intensive marginal rent, see article by the writer in the Quarterly Journal of Economics, August, 1906, pp. 596–607.

prices may be raised above the point which would have obtained under free competition. The margin in the industry is abnormal; and intensive marginal rents appear. This form of rent enters price as do interest and wages. The amount of the intensive marginal rent is simply a measure of the monopoly power or "pull" exerted. The investment of capital and the employment of labor in the industry are modified, the supply of the article is restricted, and the price is increased.

It has been urged that the view here presented is fallacious. "It might as well be argued that because a poor farmer may not work his land with sufficient capital, — and whose intensive margin is consequently higher than his better equipped neighbor's — intra-marginal rent appears upon his land, and enters the price of his produce." [1] This objection overlooks the possibility and the probability of the competition of more efficient farmers. Unless the inefficient farmer were a monopolist, he could not fix the price of his products so as to give rise to intensive marginal rents. If, for example, of a dozen competing grocers in a town, one were inefficient, the latter could not fix prices. On the contrary, his profits and personal wages would be reduced below that received by the eleven other grocers. Since the inefficient tradesman could not limit the supply or fix the price of the articles which he offered for sale, no intensive margin would appear except in so far as competition was otherwise obstructed. The case of the inefficient farmer is quite similar. Intensive marginal rent is a measure of monopoly power, not of inefficiency.

As long as variations in the value of the market opportunity of different parcels of land exist, — that is, as long as competition in regard to this one factor in production is not perfect, — differential rents will arise. Intensive marginal rents on the contrary appear when labor and capital are not perfectly mobile, when the movement of labor and capital from one industry to another, or from one place to another, is impeded.

[1] Haney, "Rent and Price; 'Alternate Use' and 'Scarcity Value.'" Quarterly Journal of Economics, vol. xxv, p. 137.

From the standpoint of the consumer, intensive marginal rents (monopoly or forced gains) enter price as do wages and interest. From the point of view of the entrepreneur intensive marginal rent is a surplus, — an extra gain over and above that obtained in a competitive business. On the other hand, the entrepreneur considers a differential rent to be a cost (expense); but under competitive conditions the consumer finds that the price of an article is equal in the long run to the expenses of production on no-rent land or on the intensive margin. But the location of this margin is determined by the interaction of demand and supply.

FRANK T. CARLTON.

ALBION COLLEGE.

THE EFFECT OF FREE WOOL IN THE NORTHWEST, 1893–96

The recent report of the Tariff Board on Wool and Woolens and the discussion on a revision of this schedule have turned attention again to the problem of the future of sheep growing in the United States. It is commonly admitted that there will always be a certain number of sheep raised as a by-product of farming. Farmers are recognizing that the benefits of keeping a few head of sheep, to consume the waste pasture and fertilize the soil, are greater than they had supposed. As the price of mutton rises, it will become more and more profitable to increase the number of sheep on the farms. There are also a few limited areas, of no value for agriculture, which may be devoted to sheep raising. Such is the case with certain arid tracts in Wyoming and Idaho. But the number of sheep which these areas will support is insignificant in comparison with the number now raised where sheep growing is carried on as an independent industry. The problem before the public is whether any changes in the tariff or other forces will so alter conditions that sheep raising will no longer continue as a separate business.

Some light has been thrown on this problem by the free wool episode of 1894 to 1897. During each of these years the number of sheep in the northwest states increased. The conclusion has been drawn from this fact that the industry was in such a prosperous condition that it could thrive in spite of the tariff. Professor Chester W. Wright, in his *Wool-Growing and the Tariff*, expresses this view when he says: "All of these states ended the period of combined industrial depression and free wool with more sheep than they had at the beginning — a fact which cannot but lead one to raise the question how necessary the protective tariff is for the wool-growers of this section." [1]

It is my opinion, however, that the increase in the flocks during this period has been misinterpreted and that there are

[1] Wool-Growing and the Tariff, p. 305.

no grounds for believing that the industry was flourishing under free wool. In fact the opposite was true.

The free wool period was not only short, but expected to be short. From the very passage of the free wool act in 1894, sheep growers looked forward, with hope of a Republican victory in 1896. The defeat of the Democrats in many states in 1894 strengthened their hope. It was confidently expected that, should the Republicans win the election of 1896, former conditions would be restored. Prices of sheep during the period were cut in half. Ewes which easily brought $3.50 in 1892 could not be sold for $2.00 in 1894. To sell at such prices meant ruin to most owners. If a man was not forced by his creditors to sell, there was but one thing to do — to let the flocks continue to grow normally and to hold over as many sheep as possible, in hope of a Republican victory in 1896. This is what was done, and this explains the continued growth in the number of sheep in the northwest states, despite the depressed conditions. If the Republicans had not won in 1896 and if there had been no hope of renewed protection, there would have been a very sudden reduction in the number of sheep in the western states.

To confirm this view, reference may be made to the statistics on the shipments of sheep out of one state. They show that the usual number were not shipped during the free wool years, and that there was a sudden increase thereafter. We have the figures of shipments out of Montana.[1]

1893	315,000	1896	600,000
1894	300,000	1897	727,592
1895	280,000	1898	583,320

In 1896 the shipments doubled, and they continued large during the following three years. The explanation of the large shipment in 1896 lies in the fact that prices quickly rose after the election; and on account of financial troubles it was necessary to realize on the stock as soon as possible. The small shipments in 1893–95 explain the increase in

[1] Montana Bureau of Agriculture, Labor, Industry, and Publicity. Reports, 1894 to 1899.

number of sheep on the range, — an increase which probably would not have continued had the period of free wool been prolonged.

Persons on the ground state emphatically that the conditions of 1893–95 were not those of prosperity. To quote the words of Senator Warren: "The fate of the ranch woolgrower during this period can be given in four words: 'they all went broke.'" On account of the low price of sheep, those who for any reason were forced to sell lost everything. It was only by holding over till protection was renewed that the average sheepman was able to maintain himself. His capital and credit had been strained to the utmost in trying to hold his flocks over, so that by the end of the period his borrowing power at the bank had been used to the limit. A failure to regain protection would have brought bankruptcy. Some interesting stories are told of the bets which men made a few days before the election of 1896, by taking an option on flocks of sheep at a price midway between the free wool price of sheep and the normal price.

Such were the results of free wool during a period when grazing land was much less valuable than it is at present. But with the coming of the dry land farmer, the range has continually been more confined. It is generally admitted that sheep cannot be profitably raised in large flocks on land worth more than $5 per acre. For the past four or five years the process of "cleaning up" has been going on in Montana. Men have been selling out their large flocks as fast as possible. It is probable that the outlook for a lower tariff has had little to do with this process. The sheepman is rapidly giving way to the dry land farmer, who will make it possible to dispose with profit of a large part of the range in a much more certain fashion than any act of Congress ever can. For the West, this change to a more intensive utilization of the land is one of the signs of thickening population and economic progress.

ROBERT C. LINE.

HARVARD UNIVERSITY.

THE COMMODITY CLAUSE IN RAILROAD LEGISLATION

The "commodity clause" of the Hepburn amendments to the Interstate Commerce Law, because of its unfortunate ambiguity, has already twice been before the Supreme Court. The first interpretation was given in a decision concerning the Delaware and Hudson Railroad, handed down in May, 1909.[1] This affirmed the constitutionality of the statute at all points; but, at the same time, emasculated it most effectually. For, in order to harmonize the opinion with prior ones holding that ownership of stock in a corporation did not constitute legal ownership of the property of the company, it was necessarily held that a railroad by owning the share capital of a coal company did not thereby possess an interest, direct or indirect, in the coal mined. Moreover, a railroad which was the legal owner of coal at the mine might escape the interdiction of the law by selling the coal before transportation began. A handy means of evading the intent of the law could not have been more plainly indicated.

An attempt to prohibit specifically stock ownership in coal mines by railroads, — thus meeting in part the situation arising out of the foregoing decision, — was made in connection with the Mann-Elkins Act in 1910; but to no avail. The Senate, by a vote of 25 to 31, rejected an amendment proposed by Senator Bailey of Texas to prohibit stock ownership so clearly "that not even a judge of the Supreme Court could fail to understand it." The negative votes were all cast by the so-called "regular" Republicans. In the meantime, the clause had been carried to the Supreme Court for further interpretation in a suit against the Lehigh Valley Railroad.[2] The government in the lower court had already been defeated in an attempt to raise questions of fact as to the pecuniary interest of the road in the coal

[1] United States v. Delaware and Hudson Railroad, etc.; 213 U. S., 257.

[2] 200 U. S., 257; decided April, 1911.

transported, irrespective of the technicalities as to legal ownership. The outcome in this case was more satisfactory. The Circuit Court was held to have erred in ruling out these considerations. It was unanimously decided by the Supreme Court that it was in violation of the law to use stock ownership for the purpose of destroying the entity of a mining corporation, while still so "commingling" its affairs in administration with the affairs of the railroad as to make the two corporations virtually one. This was a distinct gain for the government. It necessitated a compliance with the law in good faith. Upon the basis of this decision the Department of Justice instituted a new action against the Lehigh Valley Road; which was promptly met, however, by a readjustment of its corporate affairs.

The economic results under the "commodity clause" have been quite different from those doubtless anticipated by Congress. A salutary separation of coal mining from transportation is being effected; but in the case of the anthracite properties at least, in such manner as to hold out small hope of any direct benefit to the general public. Absolute alienation of their coal properties by the railroads was subject to two difficulties. Some roads, like the Reading and the Lehigh Valley, had heavy issues of bonds outstanding, based upon the security, jointly, of both the railroad and the coal properties. The two could not readily be separated without retirement of these general mortgage bonds. In the second place, the operating relations between the railroads and their subsidiary coal companies had for years been fixed upon the general principle of concentrating all profit from the two conjoined transactions of mining and carriage upon the transportation service alone. In other words, freight rates were established at so high a percentage of the selling price of coal that mining was necessarily conducted at a nominal profit if any. This made no difference to the carriers, owning both mines and roads; but it had the desired effect of making it impossible for coal operators, independent of the railroads, to engage in the business. Without a modification of this plan the

coal companies, already separately organized for the business by most of the railroads, could hardly be disposed of to advantage, either to the general public or even to their own shareholders. The only coal companies controlled by railroads which independently showed a considerable book-keeping profit were those owned by the Jersey Central and the Delaware and Hudson roads. The Lehigh Valley Coal Company had never paid dividends to its railroad corporation, but had contented itself with providing a very profitable tonnage. The Philadelphia and Reading Coal and Iron Company had likewise never been allowed to show a book-keeping profit more than sufficient to meet the interest upon its bonds and to provide for a sinking fund against exhaustion of its assets under ground.

Despite these practical obstacles, a general legal separation of hard-coal mining from transportation is in a fair way to be effected. The Delaware, Lackawanna, and Western in 1909 was the first to act. With no joint mortgages and a charter right to mine coal directly, it merely organized a separate corporation, the Delaware, Lackawanna and Western Coal Company. The capital stock of this concern was then distributed gratis as a special dividend among its own shareholders.[1] This coal company at once purchased all of the railroad's coal in stock, leased its mining appurtenances, and agreed henceforth to purchase all of its coal at the mine mouth for 65 per cent of the tidewater price. The railroad continued to mine coal; but thus disposed of it before accepting it again for carriage. The Delaware and Hudson likewise entered into a contract with a newly organized coal company, which after June, 1909, agreed to purchase all of its future output. The Lehigh Valley Railroad rearrangement was more complicated. It already had a coal company of the same name, the capital stock of which was pledged under its general railroad mortgage. Ownership was thus indissoluble. So the Lehigh Valley *Coal Sales* Company was organized, in January, 1912. Its capital of $10,000,000 was provided by the railroad, which declared

[1] Political Science Quarterly, vol. xxvi, 1911, p. 102.

a stock dividend to its own shareholders, sufficient in amount to enable them to subscribe to the capital of the new concern. This company then, like the others above mentioned, thereupon agreed to purchase all the coal mined by the railroad's subsidiary coal corporation.

At this writing great speculative interest attaches to the probable plan to be adopted by the Reading. Its intricate organization,[1] whereby both the railroad and the coal companies are owned by a purely finance or holding company, renders the problem of dissociation unique. A large volume of joint bonds are outstanding, with complicated provisions for sinking funds. The railroad actually owns no coal lands. The coal company, independently, is not profitable under existing traffic arrangements. Its operating ratio in 1911 was 98.7 per cent. It is "land poor"; carrying vast reserves of coal purchased by bond issues. The only asset sufficiently profitable by itself to make it attractive as a gift to shareholders is the subsidiary coal company of the Jersey Central Railroad, which is itself controlled by means of stock ownership. The formation of a third coal sales company, whose stock could be distributed to shareholders of the Reading, as was done by the Lehigh Valley, would seem to be the only feasible plan.

But is there not danger, financially, for these and other railroads that they may place this lucrative traffic in jeopardy by thus distributing their coal properties among shareholders by means of stock dividends? While, for a time, community of interest between railroad and coal mine may be assured through lodgment of stock ownership of both companies in the same persons, is it not likely that the two may become widely dissociated in the course of time? This contingency has been guarded against by an ingenious provision. The contracts providing for purchase and shipment of coal by the coal sales companies are terminable at the will of the railroad. So that if conflict of interest should arise in future, through transfers of stock of the coal sales company

[1] Intercorporate Relations of Railways, Special Report, *Int. Com. Com.*, 1906, p. 24.

to outsiders, the carriers would be free to cancel the arrangement; create another corporation; distribute its shares among their stockholders once more; and thereafter go on as before. Manifold and ingenious, indeed, are the devices of the law for purposes of circumvention!

Whether the "commodity clause" is to bring about a further separation of transportation from activities of carriers in other lines of business remains to be seen. It was doubtless intended to have a general application. Some roads, other than those in the anthracite coal fields, have taken steps to set off their subsidiary concerns. The Louisville and Nashville, for example, has distributed among its stockholders all the shares of the Louisville Properties Company. This is a Kentucky corporation to which the railroad had transferred its holdings of coal and other lands. It was expected at the time that its capital stock of $600,000 would be worth par. The Union Pacific has done even better. It voluntarily reconveyed to the United States considerable tracts of coal lands, where title had been called in question in the course of investigations as to such railroad ownership. While there has been no sign of the Pennsylvania Railroad disposing of its investments in the Cambria and Pennsylvania Steel Companies, made prior to 1906, it is clear that the interdiction of the law will render any further outside operations of this sort difficult if not impossible.

WILLIAM Z. RIPLEY.

HARVARD UNIVERSITY.

THE NEW BRITISH LAW ON RAILROAD REPORTS

In the article on Control of Railroad Accounts in Leading European Countries published in this Journal, May, 1910, reference was made to the appointment, in 1906, of a Special Commission of the British Board of Trade to consider changes in the required forms of accounts and statistical returns of railroads. This commission reported in May, 1909.[1] As a result of its findings, a law was enacted by Parliament in December, 1911 (to go into effect January 1, 1913), prescribing a number of changes and additions in the official returns filed by the railroads with the Board of Trade.

The law is a distinct advance toward publicity of railroad accounts in Great Britain. In addition to requiring the filing of a copy of the accounts with the Board of Trade, it provides that copies should be sent on request to every share- and debenture-holder of the company. Persons who are not share-holders may have the privilege of inspecting the accounts of any railroad on the payment of a fee of one shilling for each inspection of each railroad account. The provisions of the law may be altered by the Board of Trade after due notification and hearings; but Parliamentary confirmation is required when the proposed changes are protested by railroads representing in the aggregate one-third of the total railroad capitalization.

In accordance with the recommendation of the Special Commission, annual reports are to be substituted for the prevailing semi-annual returns. These annual reports are to be divided into two parts, one containing the financial schedules and accounts, the other containing the statistical returns. This separation is in accord with the Commission's recommendation. Because of the disagreement among

[1] "Accounts and Statistical Returns Rendered by Railway Companies": Report of the Committee appointed by the Board of Trade (1909), cd. 4697.

English railroad officials concerning the utility of "mileage" and "tonnage" costs and the like, the schedules of statistical returns are much less complete than those published by the American railroads.

From the standpoint of publicity, the most important provision of the new law is the requirement of more elaborate statements of revenue receipts and expenditures. There are ten schedules dealing with revenues and expenses; whereas under the old law there were but three. The form of these accounts plainly shows the influence of the system devised by the Interstate Commerce Commission. Maintenance expenses are separated and subdivided. Moreover, in each account, wages are shown separately from material costs.

The accounts relating to capitalization and capital expenditures are likewise stated in greater detail. A somewhat novel feature is a schedule calling for an estimate of proposed expenditures on capital account; another, also new, calls for details on proposed methods of obtaining the required funds. In view of the controversies between the American railroads and the Interstate Commerce Commission, arising from the latter's accounting rulings, the operation of the English law should be followed with interest.

A. M. SAKOLSKI.

NEW YORK UNIVERSITY.

LUMBER GRADING IN THE PACIFIC NORTHWEST[1]

AN interesting phase of the organization of trade is to be found in the systems of grading that have been adopted by the lumber industry in the great timber producing sections of America. In the Pacific Northwest the system is a growth of the last ten years; and tho complete unanimity on the part of the various mills has not yet been obtained, an enormous quantity of lumber is annually shipped only after the issuance of a sworn certificate of grade. It is mainly to the cargo trade that the system applies. Recently, however, some attention has been given to rail shipments.

The need of a system of grading was not keenly felt in the pioneering stages of the industry. In the early days the lumber was commonly loaded on the ships as it came from the mills. In some instances yards were established at the port of destination, and from these the lumber was distributed. In other cases it was simply discharged from the vessels, sorted into lots, and sold at auction. Such a system could not, of course, long continue without some modification, due to the knowledge that the manufacturers acquired as to the demands of the different markets. Later, when the reputation of the Douglas Fir, or, as it is sometimes called, the Oregon Pine, was established, purchasers would send orders to the mills, stating what sort of lumber they required. For some time the business was, in the main, done directly between the mills and their distant customers; but when the needs of the markets had become well understood and a considerable business had been built up, the "broker," with headquarters at San Francisco, made his appearance.

[1] For most of the facts here given the author wishes to acknowledge his indebtedness to President E. G. Ames and Secretary Fred W. Alexander, of the Pacific Lumber Inspection Bureau, and Secretary Frederick D. Becker, of the Pacific Coast Shippers' Association.

The lumber broker is not always what the name implies. It is said by some of the manufacturers that he is commonly a speculator, who makes his contracts with the mills at a time when prices are low, hoping to profit by a rise, tho sometimes ostensibly doing a commission business. However this may be, one of the chief results of his activity is to intensify competition. The customer who buys lumber for his own use naturally wishes to get it on the most favorable terms possible; and the broker is a specialist in buying, and can more largely devote his energies to it.

Where no system of grading is adopted for a commodity that varies considerably in quality, competition is likely to put upon the seller great pressure to provide goods somewhat better than his contract, strictly interpreted, would call for. This pressure seems to have been keenly felt by the lumber mills. The new mills, in particular, according to President Ames, would sometimes establish in this way a reputation that they found very difficult to maintain; and such competition was injurious to the older ones. A more important reason, perhaps, why competition should strongly take this form is due to the nature of the lumber trade. In this section of the country the lumber is commonly put on the ships while it is still more or less green; the distances to be travelled are great; the means of transportation are slow; and considerable variations of temperature, humidity, and the like are experienced. Under such circumstances there is likely to be some deterioration of the product. Moreover, the time that must elapse during the voyage is sufficiently great to permit important changes in the market, and the purchaser may regret his bargain by the time the shipment reaches its destination. In such cases a claim that the lumber is not so good as that ordered is likely to be filed; and as it is difficult, if not impossible, for the mill to check up the shipment, a reply to such a claim is not easy.

To meet this situation the manufacturers wished to have some system whereby the sale could be regarded as completed when the lumber was put on board the ship, no re-

sponsibility being assumed for what might happen on the voyage. Accordingly there was formed, in 1903, as a branch of the Pacific Coast Lumber Manufacturers' Association, an organization known as the Pacific Lumber Inspection Bureau; the work of this bureau being in the hands of a committee representing the various districts interested. In 1907 the Bureau was incorporated as a separate business organization, its shareholders being the various mills that wish to make use of its services. During the summer of 1911 there was a merger, under the name of the West Coast Lumber Manufacturers' Association, of the three important organizations that had represented the general interests of the trade in this section of the country — the Pacific Coast, the Oregon and Washington, and the Southwestern Washington Lumber Manufacturers' Associations — and the Pacific Lumber Inspection Bureau took over the work of the inspection bureau of the two associations last named. Tho there are still a few mills that have declined to become members of the Bureau, it now includes all but two of the largest cargo mills within its territory, which comprehends the western parts of British Columbia, Washington, and Oregon. Among its members are a number of mills that are not connected with the West Coast Lumber Manufacturers' Association.

The work of the Bureau is what its name implies — the inspection of lumber. It publishes schedules of grades and dimensions, for export and domestic trade, and lists of prices to serve as standards of relative values and bases for the quotation of prices. Members of the Bureau are not, however, bound to make use of these schedules, as the Bureau will inspect according to any standard grading rules, or even according to the terms of a special contract.

The territory of the Bureau is divided into seven districts, one in British Columbia, four in Washington, and two in Oregon. Each of these is under the care of a district supervisor, who is subject to the chief supervisor. The actual work of inspection is done by local inspectors, or, as they are sometimes called, surveyors or tallymen. When the

work is completed the inspector provides a sworn certificate of grade, which is countersigned by the district supervisor, presented to the shipper, and by him sent to the consignee. Until recently the inspectors were employees of the separate mills, but were licensed by the Bureau. It was the policy of the Bureau to keep a careful record of the name, residence, habits, and experience of the inspectors, and to refuse the countersignature of the supervisor to the certificates of any on whom it felt that it could not rely. Recently, however, the inspectors in a majority of the districts have been made employees of the Bureau, looking to it for their positions and their remuneration. In these cases the Bureau itself collects from the mills the payment for the work of inspection. It will probably not be long before this system is applied to all the districts.

A discussion of lumber inspection in this section of the country would be incomplete without some reference to the Pacific Coast Inspection Bureau, an organization which must not be confused with the Pacific Lumber Inspection Bureau, the former being a department of the Pacific Coast Shippers' Association. While there is some rivalry between the two bureaus, their work is, in the main, of a different character. The Pacific Coast Inspection Bureau is concerned primarily with rail shipments. While it will, upon request, inspect the lumber before it is put on the car (or the ship) and issue a certificate of grade, its chief function is to inspect the lumber after it has reached the purchaser in cases where there is complaint that it is not up to grade. The chief market for Washington lumber is in the Middle West, and the headquarters of this bureau are at Minnesota Transfer, in St. Paul. From this point salaried inspectors cover a large territory in Minnesota and nearby states. Salaried inspectors are available also in Washington, Idaho, Montana, and the Dakotas. In addition there are deputy inspectors, employed on a contingent basis, at a considerable number of points in the United States and Canada, reaching places as far distant as Regina, Sask., and Boston, Mass., where the amount of work to be done is not sufficient to warrant

the employment of an official inspector. In some cases visits are made to the yards of the purchasers, but more commonly samples are sent to the inspectors, whose reports are made on the basis of these samples. If as much as five per cent of the lumber is found to be off-grade the cost of inspection is borne by the shipper; otherwise it is borne by the complainant.

A number of different schedules of grades are published; and until a careful examination is made it is likely to be thought there are several different systems. In the first place, there are four kinds of wood — fir, cedar, spruce, and hemlock — and a different schedule applies to each of these. Separate schedules are published for each of the three classes of shipments — export, domestic (chiefly the cargo trade to California ports), and rail. The key to the situation is to be found in a rather elaborate schedule, covering the different kinds of wood, published by the Associated Bureau of Grades, which represented the three organizations recently united under the name of the West Coast Lumber Manufacturers' Association. This bureau does not provide certificates, its work being described as chiefly educational. Its schedules are very generally taken as the standard. The grades as defined by the others do not differ materially in character from those of the Associated Bureau; but some of the schedules contain grades that others do not. The differences are to be attributed chiefly to the different purposes for which the schedules are issued. The demands of the export market, for example, differ somewhat from those of the California market. In the former case the difficulties of the voyage make it necessary to select lumber which, even tho not thoroly seasoned, is not so green as some of that which is shipped to California.

The chief considerations governing the determination of grade are the way in which the lumber is cut and the defects it contains. Very often, tho not always, a grade is designated by the purpose for which it is intended. As examples may be mentioned "deck plank," "railroad ties," and "flooring no. 1." Such terms as "clears,"

"selects," "merchantable," and "common" are applied only to rough lumber. Among the defects considered are knots, pitch pockets, wane, rot.

The number of grades is far too great to permit consideration in detail. A few illustrations, taken from Export List G of the Pacific Lumber Inspection Bureau, which applies only to fir, will perhaps be sufficient to show the nature of the grading.

Merchantable: This grade shall consist of sound, strong lumber, free from shakes, large, loose, or rotten knots, and defects that materially impair its strength; well manufactured and suitable for substantial constructional purposes. Will allow slight variations in sawing, sound knots, pitch pockets and sap on corners, $\frac{1}{3}$ the width and $\frac{1}{2}$ the thickness or its equivalent. Defects in all cases to be considered in connection with the size of the piece and its general quality. In timber 10×10 inches and over sap shall not be considered a defect. Discoloration through exposure to the elements, other than black sap, shall not be deemed a defect excluding lumber from this grade, if otherwise conforming to Merchantable grade.

Fir Flooring No. 1. Edge grain, shall be free from all defects and well manufactured. Angle of grain not more than 45 degrees from vertical.

Stepping No. 2. This grade shall show edge grain on face to extent of not less than $\frac{1}{2}$ its width and conform generally to grade of "Selects."

The amount of lumber annually inspected by the Pacific Lumber Inspection Bureau has increased greatly, not only as an absolute quantity, but in proportion to the amount shipped and reported to it.[1] In 1904, out of a total of 1,051,201,335 feet, board measure, 405,462,497 feet were inspected. In 1910, the last year for which the figures are available, out of 1,574,119,519 feet, 1,023,884,273 feet were inspected. The inspection of lumber for rail shipments was begun only about two years ago, and the amount inspected is still very small as compared with the total. In 1910 only 5,354,144 feet were inspected. The figures for 1911 are expected to exceed 30,000,000.

[1] I am informed that the amounts reported cover, as far as the Bureau is able to ascertain, the total shipments made.

The system of inspection was established by the manufacturers for their own benefit; but it would appear that, properly and fairly managed, it should be a benefit to all concerned. It is not to be expected that there should be no evils connected with it. Whether or not it should be regarded as an evil that the risk of deterioration during a long voyage must be borne by the buyers is a matter about which it is impossible to speak with confidence. In so far as the system makes contracts clear and definite it would seem to be distinctly good. Of course it is necessary that the certificates of grade be thoroly reliable. The men in charge of the Pacific Lumber Inspection Bureau seem to realize this; and considerable emphasis is laid upon the claim that the certificates are widely accepted as honest and impartial. Some time ago representation on the inspection committee was offered to the Merchants' Exchange of San Francisco; but, for reasons which do not appear, it was not accepted. No matter how fairly the work is done, there are always opportunities for misunderstandings; and rulings that are made by the manufacturers alone are likely to be regarded as interested and arbitrary. It may be doubted, however, whether it is practicable to have an organization representing all parties, especially as regards the export trade. The possibility of government inspection seems to have been thought of at the time the Bureau was organized, but the fact that the competitive territory lies in two states and a Canadian province rendered this plan likewise impracticable. The system of inspection, however, seems to be fairly well established, and it is not improbable that, if serious dissatisfaction should arise, some method will be found by which the work can be done by a more representative organization or an independent one.

VANDERVEER CUSTIS.

UNIVERSITY OF WASHINGTON.

BOOKS RECEIVED

Adams, E. A., and Sprackling, W. E. Employer's Liability and Workmen's Compensation. Providence: Legislative Reference Bureau. 1912. pp. 69. (Legislative Reference Bulletin, No. 5.)

Alden, Percy. Democratic England. New York: Macmillan. 1912. pp. 271. $1.50.

Blanchard, Georges. Cours d'économie politique à l' usage des étudiants des facultés et écoles de droit. Tome II. Paris. A. Pedone. 1912. pp. 907.

Bureau of Railway Economics, U. S. Bulletin No. 24: Comparative Railway Statistics of the United States, the United Kingdom, France, and Germany. Bulletin No. 28: Variations in the Number of Employees 1909–1910–1911. Relation of the Number of Employees and Their Compensation to Traffic and Revenue, 1909–1910–1911. Washington: 1912. pp. 47.

Butler, Elizabeth Beardsley. Saleswomen in Mercantile Stores. Russell Sage Foundation Publication. New York: Charities Publication Committee. 1912. pp. 217.

Carlile, W. W. Monetary Economics. New York: Longmans, Green & Co. 1912. pp. 307. $3.00.

Coats, R. H. (Department of Labor). Report on Wholesale Prices, Canada, 1911. Ottawa: Government Printing Bureau. 1912. pp. 223.

Commissioner of Corporations, U. S. Report on the Steel Industry, Part II. Washington: Government Printing Press. 1912. pp. 144.

D'Ambrosio, Manlio Andrea La passivité économique. Paris: Giard. & Brière. 1912. pp. 384. 9 *fr.*

De Mars, Robert. The Marselite. Chicago: J. F. Ryan. 1912. pp. 64. $ .50.

Department of Labor of New York. First Annual Report of the Bureau of Industries and Immigration, 1911. Albany: State Department of Labor. 1912. pp. 184.

Department of Labor, U. S. Report on Condition of Woman and Child Wage-Earners in the United States. Vol. XV. Relation between Occupation and Criminality of Women. Vol. XVI. Family Budgets of Typical Cotton-Mill Workers. Washington: Government Printing Office. 1912. pp. 119.

Dufourmantelle, Maurice. Agricultural Credit (Translation by Pauline C. Biddle). Philadelphia: Allen, Lane & Scott. 1912. pp. 43.

Dunn, Samuel O. The American Transportation Question. New York: D. Appleton & Co. 1912. pp. 290. $1.50.

Forbush, W. B. The Coming Generation. New York: D. Appleton & Co. 1912. pp. 402. $1.50.

Gates, Frederick T. The Truth about Mr. Rockefeller and the Merritts. Privately printed. 1912. pp. 32.

Hicks, Frederick Charles. Competitive and Monopoly Price. Cincinnati: University of Cincinnati. 1912. pp. 39. $ .40.

Huber, Johannes. Kapital- und Verwaltungsbeteiligung der Arbeiter in den brittischen Produktivgenossenschaften. Stuttgart: W. Kohlhammer. 1912. pp. 203. *M.* 5.50.

Jenkins, Hester Donaldson. Ibrahim Pasha, Grand Vizier of Suleiman, the Magnificent. New York: Longmans, Green & Co. 1912. pp. 123. (Columbia University Studies, Vol. XLVI. No. 2.)

Judson, Frederick N. The Law of Interstate Commerce and its Federal Regulation. (Second Edition.) Chicago: T. H. Flood & Co. 1912. pp. 805.

Kellogg, Vernon L. Beyond War. New York: Henry Holt & Co. 1912. pp. 172. $1.00.

Kendrick, L. and Salisbury, H. P. (compilers). General Constitutional and Statutory Provisions Relative to Suffrage. Providence: Legislative Reference Bureau. 1912. pp. 99. (Legislative Reference Bulletin, No. 6.)

King, Willford I. The Elements of Statistical Method. New York: Macmillan. 1912. pp. 250. $1.50.

Kinglsey, Darwin P. Militant Life Insurance and Other Addresses. New York: New York Life Insurance Co. 1912. pp. 441.

Labor Department, England. Report on Trade Unions in 1908–1910. London: Government Stationery Office. 1912. pp. 140.

Layton, W. T. An Introduction to the Study of Prices. London: Macmillan & Co. 1912. pp. 158. $ .90.

Levine, Louis. The Labor Movement in France. New York: Longmans, Green & Co. 1912. pp. 212. $1.50. (Columbia University Studies. Vol. XLVI, No. 3.)

Liesse, André. La statistique. Les difficultés — Les procédés — Les résultats. 2e Edition. Paris: Félix Alcan. 1912. pp. 192. 2 *fr.* 50.

Lowenthal, Esther. The Ricardian Socialists. New York: Longmans, Green & Co. 1912. pp. 105. $1.00. (Columbia University Studies. Vol. XLVI, No. 1.)

Magruder, F. A. Recent Administration in Virginia. Baltimore. The Johns Hopkins Press. 1912. pp. 204.

Ministère de l'industrie et du travail. Statistique des grèves et lock-out en belgique, 1906–1910. Bruxelles: J. Lebèque & Cie. 1912. pp. 245. 3 *fr.*

Ministerio de Agricultura Argentina. El Comercio Internacional Argentino, Cifras que Revelan su Progreso. No. 5. Buenos Aires. Oficina Meteorológica Argentina. 1912. pp. 39.

Mondaini, Gennaro. Politica Coloniale e Socialismo. Roma: Tipografia Editrice Nazionale. 1912. pp. 35. *L.* 1.

National Tax Association. State and Local Taxation. Columbus: National Tax Association: 1912. pp. 485. $2.00. (Addresses and Proceedings of the Fifth Annual Conference.)

Parliamentary Document. Report on Industrial and Agricultural Co-operative Societies in the United Kingdom. London: 1912. pp. 274. 1*s.* 8*d.*

——. Standard Time Rates of Wages (1912). London: 1912. pp. 124. 6*d.*

Payne, E. George. An Experiment in Alien Labor. Chicago. University of Chicago Press. 1912. pp. 72. $ .75.

Perin, René. Das Problem des unverdienten Wertzuwaches. Wien: Manz. 1912. pp. 151. *K.* 4.80.

Rappard, William E. Le facteur économique dans l'avènement de la démocratie moderne en suisse. I. L' agriculture à la fin de l'ancien régime. Genève: Georg & Co. 1912. pp. 235.

Rignano, Eugenio. Le rôle des théoriciens dans les sciences biologiques et sociologiques. Bologna: Nicola Zanichelli. 1912. pp. 16. Extrait de "Scientia," Vol. XI.

Scott, J. B. (Editor). Fisheries Arbitration Argument of Elihu Root. Boston: The World Peace Foundation. 1912. pp. 523.

Schelle, G. Le bilan du protectionnisme en France. Paris: Félix Alcan. 1912. pp. 250. 2 *fr.*

Seligman, E. R. A. (Editor). The Social Evil, with Special Reference to Conditions Existing in the City of New York (2d edition). New York: G. P. Putnam's Sons. 1912. pp. 303. $1.75. (A Report Prepared (in 1902) under the Direction of the Committee of Fifteen.)

Spargo, John and Arner, G. L. Elements of Socialism. New York: Macmillan. 1912. pp. 382. $1.50.

Sterne, Simon. Railways in the United States. New York: G. P. Putnam's Sons. 1912. pp. 209. $1.35.

Walling, W. E. Socialism as it is. New York: Macmillan. 1912. pp. 452.

Weyl, Walter E. The New Democracy: An Essay on Certain Political and Economic Tendencies in the United States. New York: Macmillan. 1912. pp. 370. $2.00.